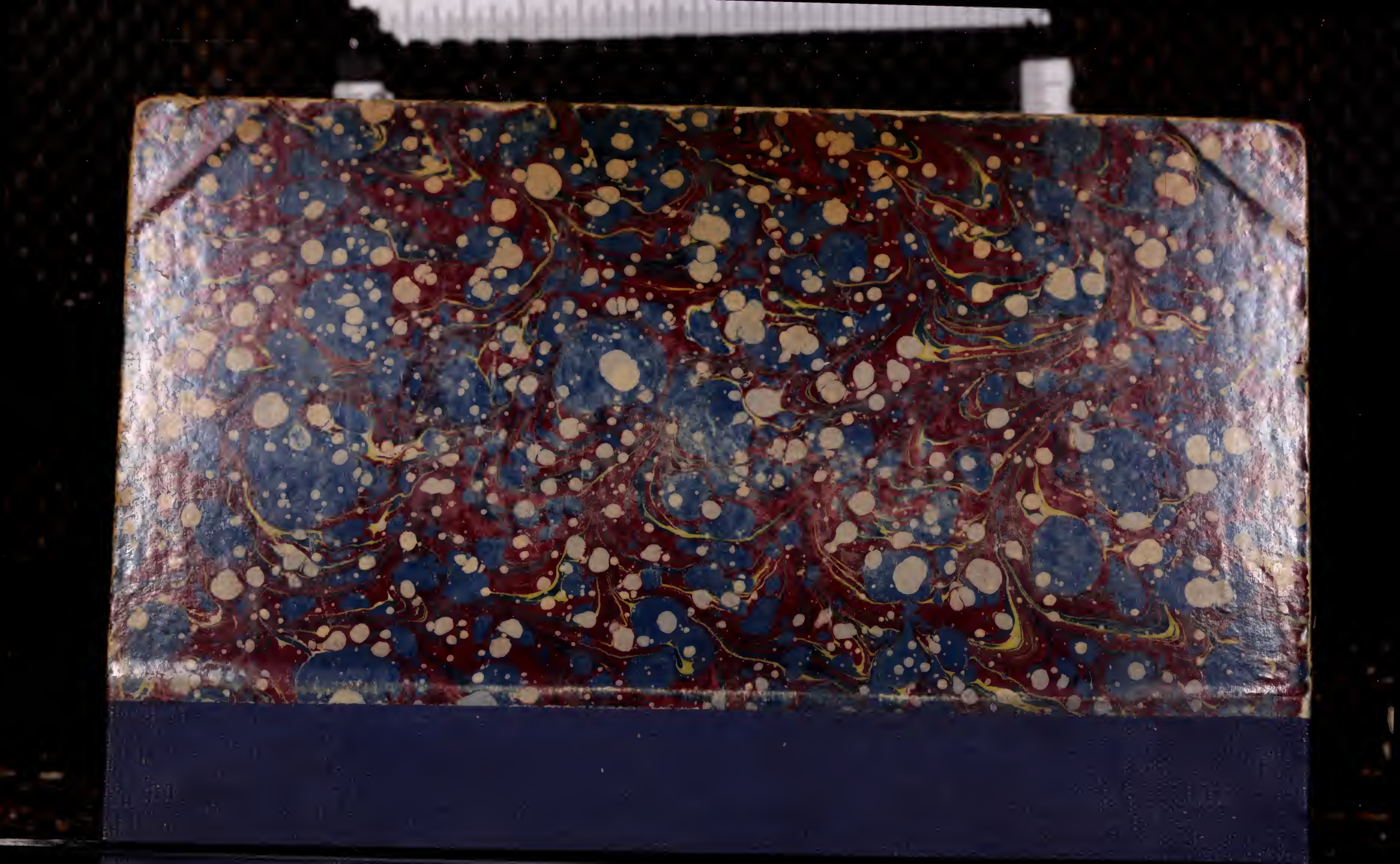


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THE JOURNAL OF OPHTHALMOLOGY OTOLOGY AND LARYNGOLOGY



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CONTENTS FOR JANUARY, 1915

FOUNDERS AND FORMER EDITORS..... II and III

EDITORIALS

History of the Journal..... 1
New Medical Journalism..... 2
Bronchial Asthma 3
The American College of Surgeons..... 4

ORIGINAL CONTRIBUTIONS

The Teaching of the Specialties in the Undergraduate Medical Colleges. By Royal S. Copeland, M. D., New York City..... 8
Obscure Sinus Disease in Relation to General Health. By Burton Haseltine, M. D., Chicago..... 13
Nasal Obstructions as the Cause of Diseases of the Middle Ear. By George James Alexander, M. D., Philadelphia..... 36
Bezold's Mastoiditis, A Third Series of Cases. By Gilbert J. Palen, M. D., Phildelphia..... 45
Literary References 55
The Use of Heated Ether and Oxygen in Nose, Throat, and Ear Operations. By R. Franklin Hill, M. D., Philadelphia..... 56
Laryngeal Diptheria. By Guy M. Cushing, M. D., Chicago..... 65
Lip Reading for the Slightly Deaf. By Gertrude Torrey, Chicago 70
A Needle for Submucuos Suturing and a New Instrument to Aid in Tying Sutures Within the Nose. By L. E. Hetrick, M. D., New York 75
The Great American Farce — Trial By Jury. By Burton Haseltine, M. D., Chicago..... 77
Post-Graduate Experiences in Chicago. By Ed. Bywater, M. D., Grant's Pass, Oregon..... 85
Ohio State Homeopathic College..... 90
ANNOUNCEMENT 91
NEWS ITEMS 92

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The Journal of Ophthalmology Otology and Laryngology

Vol. XXI JANUARY, 1915 No. 1

ANNOUNCEMENT

ACCORDING to the announcement in last month's issue of the Journal, we have begun the New Year with an enlarged edition, and, we trust, improved. The manager has spared no effort, togging up the Journal with a new dress, improving the paper and standardizing the type. The Associate Editor, Dr. Burton Haseltine, needs no introduction to most of the subscribers. He is a past President of the O. O. and L. Society, a Professor of the Hahnemann Medical College of Chicago, a Fellow of the American College of Surgeons. He has been active in Society, educational and journalistic work.

The Editor desires to express his thanks and appreciation to Dr. Haseltine for his assistance and co-operation in editing the January, 1915, number of the Journal.—Ed.

HISTORY OF THE JOURNAL

The Journal of Ophthalmology, Otology and Laryngology was founded and edited in 1889 by Dr. George S. Norton, of New York, assisted by Dr. Charles Deady. On the death of Dr. Norton in 1891 Dr. Deady succeeded to the editorship and served in this capacity until 1901. Up to this time the Journal appeared as a quarterly. Drs. John L. Moffat and A. Worrall Palmer edited and conducted the Journal as a bi-monthly from 1901 to 1904.

The Journal was merged with the *Homoeopathic Eye, Ear, Nose and Throat Journal* in 1911. At this time it was revised to a monthly.

The *Homoeopathic Eye, Ear, Nose and Throat Journal* was founded and edited by Dr. Arthur B. Norton and associates in 1895 and appeared as a monthly. In 1905 it was purchased by Dr. Palmer and edited by Drs. Moffat and Palmer. In 1911 it was merged with and name changed to the *Journal of Ophthalmology, Otology and Laryngology* and was edited by Drs. Palmer and Moffat until September, 1914.

Dr. Charles Helfrich, of New York, was a co-founder of the *Eye, Ear, Nose and Throat Journal* with Dr. A. B. Norton and served as associate editor from 1895 to 1905. Dr. John B. Garrison, of New York, was a co-founder of *Eye, Ear, Nose and Throat Journal* with Dr. A. B. Norton and also served as associate editor from 1895 to 1905. Dr. George W. McDowell served as co-editor of the *Eye, Ear, Nose and Throat Journal* from 1896 to 1902.

The present incumbents began their service September, 1914, and extend to their predecessors our thanks for their faithful service in the past and congratulations upon their success in making the Journal what it has been. Their advice and counsel will always be welcome in the future, and in fact it is solicited.—Ed.

NEW MEDICAL JOURNALISM

We hope you like this journal.

We hope you like it so well that you will read it and pass it along to a few friends—not *your* copy, but extra copies, which can be procured by suitable arrangement with the publisher. But we hope you do *not* like it so well that you can't see some way in which you can help to make it better. The Journal is issued by and for a group of practitioners, who are doing work that is unsurpassed in the various lines they represent. This group should grow larger, and its members should be benefited individually and unitedly by an organ of publicity and inter-communication such as this journal hopes to be. Every member of this group is a potential contributor to the journal and has a professional, sentimental and financial interest in it. Every member of this group is doing some work that is peculiar to himself or to his situation, something that he has found by the test of experience to be worth while, something that would be helpful to others to know.

Especially is this true of the intimate personal work not done in public institutions, but in private practice, where many times the finest achievement is accomplished.

It is as a medium of exchange for such material that a periodical of this character can be made most valuable. It has a place entirely unfilled by journals devoted to reports of research work or to abstracts of literature or to wholly conventional material.

It is not to be a journal merely for specialists, but will cover much of that large field where special and general practitioners are equally interested. This "borderland" has been too much ignored. To do this it must have the support and the contributions of both these classes of physicians and of those working in widely varying circumstances. It wants your material whether your workshop overlooks one of those famous thoroughfares named "Broad," or the prairies of Saskatchewan. And for the sake of the journal, for the sake of our organization, for the sake of yourself, when the management calls on you for contributions, medical, literary or financial, send them and send them in such season that the march of progress need not be delayed on your account. When the members of the O. and O. Society learned that a change in the management of their official organ had become necessary, they experienced at first something very like a panic. A sort of first aid committee was formed and a considerable amount of their time and your money was spent before a way out of the perplexity was found.

But it was found, and you have the benefit. The Journal now has an editorial and business management that money could not procure, and one that insures its maintenance as a publication unsurpassed in its domain.

The first result of the new organization is before you. It is only a beginning, but as a beginning we hope it will stimulate interest in future issues.—B. H.

BRONCHIAL ASTHMA

The condition clinically known as bronchial asthma is one of practical interest to every physician whether or not he devotes himself to an exclusive line of work. In this issue of the Journal appears a

symposium upon sinus disease in relation to general health in which the question of the etiology of asthma is given prominence.

One theory is advanced that has the double merit of being new and of being strongly appealing in view of what few facts we have, bearing upon this most obstinate affection. This is the theory advanced by Dr. W. H. Phillips as to the perverted function of certain ductless glands, especially the hypophysis, in relation to this disease. Upon first consideration Dr. Phillips' theory seems to explain a large number of the phenomena observed in the clinical study of asthma. It is not in conflict with the theory of anaphylaxis and indeed goes a step further in elucidating that theory. It is not opposed, as Dr. Phillips implies, to the idea that ethmoid disease is often a casual factor in asthma, but rather supports that idea by offering an explanation as to how such a cause may operate.

If the hypophyseal function suffers from a chronic intoxication, surely here is a frequent focus from which such intoxication may be supplied. When we so commonly have infections here showing their effects upon blood count and renal function, it is reasonable to suppose that they can disturb also glandular metabolism. To one familiar with the foul conditions surgically encountered in chronic sinus disease there is nothing fanciful about the idea that the nearby hypophysis may suffer from them.

Here is a field for physiologists, bacteriologists, pathologists and rhinologists, well worthy of study and, as Admiral Schley did *not* say, "gory enough for all."—B. H.

THE AMERICAN COLLEGE OF SURGEONS

In the city of Washington, on November 16th, was held the third convocation of the American College of Surgeons. This meeting was in some respects the most important event in the history of American surgery. It was important because it established beyond further question the fact that the College of Surgeons is a permanent institution and is to exercise a tremendous influence upon the future of American surgery. It was important, too, in that it made clear to a large extent the policies that are to guide the organization in future. Both these questions have up to this time been in some respects uncertain.

With the perfection of the permanent organization and the assur-

ance of financial strength and especially with the moral support of such a large majority of the best element in the profession, the college has passed beyond the tentative stage.

It becomes important, therefore, to consider its purposes and methods from the individual standpoint and with reference to existing organizations. One year ago the writer was asked by the editor of the *American Institute Journal* to discuss the attitude of surgeons of our school toward the new college. It was his suggestion then that we should act collectively and not as individuals and that we should not attempt to make a final decision until we could answer certain questions with reasonable certainty.

These questions are equally pertinent today, and we have now reached a point where they can all be answered quite definitely.

Upon the answer to these questions should depend chiefly the attitude of each member of our school toward the college.

First—Is there need in America for a higher ethical or a higher scientific standard in the practice of surgery?

An affirmative answer to this is obvious.

Second—Does the College of Surgeons represent a sincere effort to meet this need?

If we focus our attention upon individuals a confusion of opinions upon this point may result, but if we consider in toto the personnel of the college the affirmative is beyond question.

Third—Is the organization as established likely to succeed in this effort? Here also the consideration of specific measures must elicit various opinions. Errors are unavoidable in such undertakings and some changes of policy or method must at times be made, but already enough has been accomplished to prove that the college is a power for good.

Fourth—Is the college as established a truly liberal and democratic institution willing to give credit for meritorious work wherever done; especially is it free from the narrow sectarianism of the American Medical Association? This question is one upon which we might feel some doubt even with the others answered, for at first glance the A. C. S. looks rather like an offspring of the A. M. A., which surely does not suggest liberality nor democracy.

It now seems clear, however, that this impression is unjust, for

even if we regard the college as an offspring it is in a measure a protest against the policies and methods of the older organization.

In two especially distinct ways has this been shown—first, by a genuine willingness to consider the merits of institutions and of individuals Regularly listed as "sectarian" and by frankly giving credit where merit was found; second, by seeking out and giving recognition to individuals doing good work unconnected with organizations of any kind. This is a gratifying departure from the close corporation policy of the A. M. A., which places regularity above efficiency and in the regularity business tries to control at least fifty-one per cent.

Without multiplying contrasts it may be said that in every way the College of Surgeons breathes a refreshingly modern spirit. It had its inception in the Congress of Surgeons of North America, which was so amazingly successful, chiefly because it abandoned academic theorizing and went back to practical work. Its qualifications for membership are based not upon examinations and scholastic degrees, but upon verifiable records of surgical experience.

It seeks to establish no exclusive method of qualifying for surgical practice, but requires only that such qualification be genuine. It establishes no class distinctions and to the greatest possible degree fulfills the ideal of democracy. It is noticeable that with the completion of the organization the conduct of its affairs has become more and more the business of the general membership. Likewise the distinction of Class "A," "B," etc., originally proposed, was this year entirely abandoned, a seemingly wise decision for an institution called American.

Speaking broadly, therefore, it would appear that the College of Surgeons has proved its claim upon the good will of the entire medical profession of America. For those of the homeopathic branch the time has come for a change from an attitude of watchful waiting to one of sincere and vigorous support.

By unanimous vote of the members present at the Washington meeting the American Institute of Homeopathy was placed upon the list of accredited organizations, thus putting its members and committees upon the same footing as those of any other first rank medical society. Fourteen of its members were elected to the Board of Governors and it was well represented upon the various committees of the college. The same credit is accorded for work in homeopathic

colleges and hospitals as for that in other institutions, provided it is of equal grade.

This is no "triumph of a cause" and no vindication of any therapeutic principle and should not be so exploited. It is simply the frank recognition by sincere men of honest work done by other sincere men and as such should be met by a spirit of equal frankness.

If we agree with the above answers to these fundamental questions it is incumbent upon us individually and collectively to come forward with our moral and financial support to the college in no half-hearted way.—B. H.

THE TEACHING OF THE SPECIALTIES IN THE UNDERGRADUATE MEDICAL COLLEGES

By Royal S. Copeland, M. D.,
New York City.

THERE are almost as many theories of education as there are teachers. There are almost as many theories regarding medical education as there are practitioners of medicine. Every man, I suppose, has daily opportunity to compare the measure of his own education with that of some rival practitioner. This comparison, varying with the egotism of the individual, may be satisfactory or disturbing. It is to be presumed and, from my own standpoint, it is probable, that the average practitioner of medicine is an honest man, seeking to cure his patients, solicitous of their welfare, rejoicing if they improve, and sad if any effort ends in failure. When one hears of the cure of an erstwhile patient by some neighboring practitioner, it is not remarkable if the wise and conscientious man pauses long enough to wonder why he did not possess the skill evidenced by his competitor. It is conceivable, perhaps, that a man might be so thoroughly educated and so astute as never to require these moments of self-examination and self-doubt. As human nature is constituted, however, men of this sort are rarely met.

It is in the moment of contemplation of failure that the conscientious man wonders whether his own education was exactly what it should have been. This may lead him to doubt the excellence of his own college, and may lead him even to decide that his alma mater is somehow inferior to other sister institutions. Even though he does not reach this extreme conclusion, he is bound to formulate convictions of mind regarding the methods of instruction in individual subjects.

Unfortunately, not every man who fills a professorial chair is qualified to teach medicine. He may possess the wisdom of the ages and yet have absolutely no facility of imparting his knowledge to other people. It is frequently the case that a man has distinguished himself professionally and has about him the glamour of professional success,

yet, sad to relate, this man is absolutely a failure as a medical teacher. No matter, then, how perfect the scheme of education in his particular branch of medicine, it may fall down completely because of the personality of the instructor. The purpose of this paper, however, is not to discuss that side of the question; it is desired now simply to consider the curriculum itself, taking for granted that the professorial ability is of the first water.

There will always be a difference of opinion among us as to the particular place of the specialties in the undergraduate study of medicine. Medical education as it exists today is the result of evolution. Medicine has been a tremendously progressive science, or art, as many prefer to designate it. In my own experience, now covering thirty years since beginning the study of medicine, I have seen added to the curriculum many important subjects, such as bacteriology, modern hygiene, laboratory pathology, electro-therapeutics, and much of importance in the specialties. The length of the course has gone from two years to three years, and from three years to four years; it may be said, indeed, that with the longer term and the increase in years, the medical course today is three times as extensive as it was thirty years ago.

In the New York Homoeopathic Medical College and Flower Hospital the faculty had occasion, two or three years ago, to make a careful examination of the curriculum of this institution. It was found that the upper classmen had sixty hours in ophthalmology, sixty hours in otology, sixty hours in rhinology, sixty hours in electro-therapeutics. sixty hours in hydro-therapeutics, sixty hours in dermatology, sixty hours in nervous diseases, sixty hours in mental diseases, beside an infinite number of hours in the general subjects, such as internal medicine, diagnosis, surgery, obstetrics, gynaecology and materia medica. Such an arrangement of the curriculum looks to the development of a composite specialist and not to the making of a well-informed general practitioner. This was the conclusion of the faculty and it was determined to materially reduce the amount of instruction in the specialties, aiming to give the student only such information in each specialty as to make him a safe and wise practitioner.

It must not be forgotten that the student upon the benches in a medical college is not a doctor; he is a layman preparing to be a doctor.

It will be admitted, probably, that it is the purpose of the undergraduate medical school to prepare its students for the general practice of medicine. It is granted at once, of course, that the general practitioner who possesses most special knowledge, is bound to be most useful, but since limitations of some sort must be placed upon the college, it would seem the part of wisdom to strictly confine the instruction to those subjects, and to such parts of those subjects as are likely to be met in the daily walk of the general practitioner. Those of us who are doing special work in ophthalmology, otology and laryngology certainly feel that no practitioner without special preparation is qualified to deal with the complicated, obscure and serious diseases that attack these organs. When too much instruction is imparted in a specialty to the undergraduate student, it may give him a feeling of security in dealing with eye and ear conditions, a feeling that may be entirely unjustifiable. It is better for the practitioner to admit at once his entire ignorance of special conditions than to dally along with conditions about which he really knows very little. I think the poet has expressed it when he advises against tasting at all unless one drink deep of the Pierian spring.

To be more specific, it would seem to me that in the teaching of undergraduate students there should be a text-book course in each of the subjects, the eye, the ear, the nose and throat. The reason I advise a text-book course is because, in my opinion, every medical library should contain at least one text-book on each of these subjects. No matter what may be the intentions of the practitioner, there will be times when he needs information on each of these subjects. Unless the senior student is required to provide himself books, so poverty-stricken is he that he will deny himself these implements of his profession in order to feed his stomach. If necessary, he must be made to starve in order to be properly equipped. In the next place, I recommend the text-book because there are few lecturers who have the ability to drill into a body of students, especially in a short course of lectures, any complete and exact knowledge of the subject. Fifteen or twenty hours given to each one of these subjects will permit the teacher to assign definite lessons, covering fifteen or twenty pages at a time. Such books as I have in mind have from fifteen to twenty-five chapters. Certainly he is a poor teacher who cannot cover in an hour's

quiz at least one chapter of such a book, and have ample time to amplify favorite subjects by such comments as he may wish to make. Briefly, therefore, it is my opinion that all the undergraduate study of our specialties can be sufficiently well covered by not to exceed sixty hours of class instruction.

On the clinical side, circumstances must dictate the amount of instruction. This will be largely determined by the size of the faculty. Speaking medically, I have lived twice. One of these times was at Ann Arbor, where all the work of the junior and senior years was conducted by five or six men. In such an instruction there is bound to be such a division of labor as to give each man on the faculty abundant time, and will thus permit more clinical hours than could be given under other circumstances. In an institution where the faculty is large and where hours must be found for a great many teachers, necessarily the amount of clinical instruction in the specialties is sure to be limited. I should consider it a serious mistake, however, if provision were not made for such clinical instruction as will permit every student to see all of the common diseases of the external eye, some operative work, and begin some degree of familiarity with the test case and the ophthalmoscope. In otology he should see cases of impacted cerumen, acute and chronic otitis media, enough mastoid cases to make him familiar with the diagnosis, and, if possible, a few cases of labyrinthine disturbance. In rhinology and laryngology almost any clinic will offer the common diseases likely to be met with in the practice of medicine. There is bound to be found in the dispensary enough work on the sputum so that an alert clinical assistant can gather together, on occasions, a "show clinic," capable of demonstrating the commoner diseases.

A specialist has been defined by one of our ex-Presidents as "A man who knows something about everything and everything about something." The specialist differs, therefore, from the general practitioner in that he adds to his general knowledge of medicine a special knowledge in one department. Since the undergraduate medical school is educating general practitioners, it will not attempt to give this intimate knowledge of any single branch. It is aiming simply to give the student some knowledge on every subject; in other words, it is trying to teach him something about everything. As compared with

obstetrics, diagnosis, internal medicine, minor surgery, and materia medica, certainly our particular specialties must take a back seat. Instruction in these subjects, for one who intends to pay special attention to these organs, must be given in graduate institutions. Fortunately we are blessed in this direction, and therefore there is no need for the undergraduate schools to waste the time of the medical student by adding long hours to his already overloaded daily task.

In closing I wish to suggest that in my opinion a study of the curricula of the medical colleges of this country would bring about the elimination of so many wasted hours that there would be abundant time for all the added science that the advocates of higher standards are so ardently demanding. It seems to me a most unscientific procedure to continue to add subjects to the medical curriculum, without first making an effort to properly apportion the time consumed by those subjects already included in the curriculum. Limiting the instruction in certain subjects will make unnecessary the addition of another preliminary year. Personally, I am in favor of the added hospital year, but, so far as the year of science preliminary to study is concerned, I believe that said work could be included without the addition of another year of college attendance. Our specialties, I conscientiously believe, are better taught in the homoeopathic colleges than they are in the institutions of other schools. My particular criticism, if I make any at all, is that they are too extensively taught. This is a subject worthy the thought and discussion of our profession, and perhaps no more important question can be considered in this inaugural number of our aggressive JOURNAL.

58 Central Park, West.

OBSCURE SINUS DISEASE IN RELATION TO GENERAL HEALTH

A SYMPOSIUM*

By Burton Haseltine, M. D.,
Chicago.

MEDICAL literature has in recent years contained a large amount of material regarding the relationship between diseases of the eye and diseases of the nasal accessory sinuses. Disturbances of the neurological machinery of vision have also been traced to sinus disease, as have, of course, infections of the brain and its coverings.

In our desire to emphasize a neglected point we have sometimes fiddled too much upon one string and some enthusiasts have been little less than sinus crazy.

When one operates upon a general paretic or opens a sinus for tabetic atrophy or treats an interstitial keratitis by surgical measures one is, medically at least, insane and should be placed in whatever Matteawan is best suited for such menaces to public safety.

The residue of benefit that should result from all this is that the profession recognize the relation that does exist between eye and brain and sinus pathology, and this result would seem to have been accomplished.

I therefore do not need to occupy your time with iteration of facts that are familiar to you. What I do wish to discuss is a subject I believe to be far less familiar, namely, the relation between obscure sinus infections and certain impairments of general physical health.

Some of these relationships, at least, are scarcely touched upon in literature, and yet extensive experience has shown them to be of great clinical importance.

I have used the phrase "obscure sinus infections," first, to exclude those acute infections easily recognized, and, second, to emphasize the fact that the low grade, chronic, often unrecognized sinus disease is the one most insidious in its effect upon general bodily health.

---

* Presented to the Southern Homeopathic Medical Society, Baltimore, November 11th, 1914.

I would not imply that acute sinus infections are always easily diagnosed or that they are not serious in their possible effects, but their general characteristics are pretty well understood, and I can add little to what is commonly known upon the subject.

Speaking generally, the situation to which I refer is that of a patient with no marked symptoms calling attention to the nose or sinuses, perhaps with no history of more than what he calls "slight catarrh," and possibly even with no objective symptoms discovered by the usual cursory rhinological inspection.

All this may be true and still he may suffer from a chronic sinus disease most serious in its consequences and most stubborn in its resistance to remedial measures.

The subject is a broad one, and as its various phases are to be considered by my colleagues in the symposium, I will present merely an outline first, of the general conditions to be considered in relation to sinus disease, and, second, the special diagnostic measures available.

Following the consideration of the various topics, I will briefly describe some of the most successful methods of treatment.

Under general conditions, in the order of frequency, I would place:

First, chronic anæmia, or, more accurately, perhaps, chronic toxæmia.

One of the commonest and one of the hardest problems met by the physician in any field of practice is that presented by patients of this type. They are more frequently women, but often enough men. Bad cases in older times were called chlorosis. Later we dubbed them neurasthenics and then hysterics or psychasthenics and sometimes "T. B.'s," but always we called them nuisances, for they are the chief reason why doctors grow gray before their time.

Now we know that many, perhaps most of these patients, are suffering from toxæmia due to some continuous source of infection, and our work consists in finding and removing that source. It often means a comprehensive search. It may be luetic even without history or symptoms. It may be intestinal, including the busy little appendix. It may be renal, it may be pelvic, it may be dental, it may be tonsillar, and don't forget, gentlemen, it may be ethmoid, sphenoid or maxillary.

Second, and closely associated with the above, are the conditions due to disturbed function of the ductless glands. Both hyper- and

hypo-thyroidism, as you know, may result from chronic exposure to infection, and these are often associated with obscure sinus disease. Beyond doubt the disturbance of function in other ductless glands is often traceable to some focus of chronic infection.

Third, chronic rheumatism or recurring rheumatoid arthritis. It is to the credit of our organization that we first published to the world the relation between tonsil infection and rheumatism and first successfully applied this knowledge, but we must not look only to the tonsils for the infection. The sinuses must be remembered here.

Fourth, oto-sclerosis. While this is not strictly a condition of general health, I have placed it upon my list because I have something to say to general physicians concerning it.

By oto-sclerosis we mean that condition of the internal ear, apart from all middle ear or tubal changes, which produces the type of deafness with tinnitus so often found in people under thirty years of age. It is nearly always progressive and is not modified by any form of treatment. Heredity is an element in it, but clinically it is nearly always found to occur in patients showing signs of low-grade toxæmia or at least some nutritional fault. I believe, therefore, that where sinus disease exists in such cases the labyrinth changes are due to general causes rather than to any local extension.

Fifth, bronchial asthma. I do not say and have never said that all cases of bronchial asthma are due to nasal disease. But I did say long ago that large numbers of them are, and this has now been confirmed by so many observers that the fact is quite generally recognized.

The pathology of asthma is still obscure and there is much doubt as to whether the chief cause is general or local. The attack itself is surely neurotic in character—having the nature of a nervous storm involving the machinery of respiration. The latest theory is that it depends upon an anaphylaxis to certain toxins. Such anaphylaxis is supposed to be due to prolonged exposure to various infections—and at last investigators are paying attention to the nasal sinuses which in this case should have been the first locality suspected.

Differential Diagnosis

Given, then, a case in which for any of these reasons we suspect the existence of sinus disease not manifest by unmistakable signs, what local diagnostic measures are available?

First, thorough rhinological inspection, or repeated inspections at various times, including shrinking of intra-nasal tissues, postural tests, use of naso-pharyngoscope, etc.

Second, argyrol tamponade by the method of Dowling, repeated if necessary.

Third, transillumination and radiography.

Fourth, bacteriological study, including cultures from nasal and sinus secretions.

In this connection I wish to report some observations made by Dr. L. K. Canouse, of Chicago, in our studies of the relation between nasal disease and bronchial asthma.

I first called upon Dr. Canouse to make some tissue examinations and bacterial cultures for me from asthmatic cases, and in one patient he was surprised to obtain from the ethmoid cells a practically pure culture of a bacillus he had previously found in the sputum of asthmatics.

This is a Gram-positive bacillus belonging to the pseudo-diphtheritic group. In two cases showing about equal numbers of this bacillus and of pneumocci and staphalococci, vaccines were made. No improvement resulted from a large number of injections of pneumococcus and staphalococcus vaccine. Second cultures showed 50% pneumococci and 50% pseudo-diphtheria. Marked improvement followed the use of vaccines made from the latter in both cases.

In another case showing nearly pure cultures of this germ improvements followed promptly the use of vaccines.

Dr. Canouse wishes to say in this connection that the same germ is found in about 15% of normal individuals, and no conclusions should be drawn from a small number of tests. My own observation from a rather large clinical experience is that vaccines are of no value while there are conditions in the nose or sinuses preventing the maintenance of perfect local cleanliness. Even after good drainage is established and local cleanliness maintained some cases are slow in the process of recovery, and here an autogenous vaccine is often effective.

Nothing is more definite than the relation between ethmoid infection and bronchial asthma in certain cases and nothing is more positive than the results of proper nasal treatment where such relationship is clear.

J. R. McCleary: The subject of accessory sinuses has become so extensive and so important from the general health standpoint that we must ever be on the alert for symptoms of sinus trouble. Especially those low-grade chronic forms of inflammation so prevalent in many of these cells. You are familiar with many of the diseases of the upper air passages and yet the rhinologist who is in daily contact with the nose and accessory sinuses becomes deeply impressed with the dangerous character of the inflammation found within the sinuses.

There are so many things to be considered with the etiology, symptomology, pathology and bacteriology of the different sinus involvements that we must confine ourselves to a brief resumé of practical facts. You readily realize that the natural openings of the sinuses are so located that when diseased the drainage is greatly impeded, more particularly so where the outlet is high, as in the maxillary antrum and the sphenoid. The openings in the other cavities being near the floor, polypi, hypertrophied turbinates or growths can easily occlude them.

Many physiologists consider the membranes lining the sinuses as a possible modified continuation of the Schneiderian membrane. The mucous membrane which lines the frontal sinus does not differ from that found in the other sinuses except that it is somewhat thinner. These membranes are capable of enormous swelling in consequence of inflammatory processes. This, with the addition of the serous element and the leucocytes from the blood, the meatus of the sinus being easily obliterated, causes excruciating pain from pressure.

Swelling of the mucous membrane within the nose quite frequently occludes the natural openings. This occlusion is soon followed by an absorption of the contained air, thus creating a vacuum. This leads to transudation of serous fluid into these cavities, as we often find in the middle ear. You know that fluid soon forms a favorable medium for the development of pathogenic bacteria, and then the trouble begins.

Conditions predisposing to these affections are both general and local. Some of the general factors, as a rheumatic or gouty diathesis, specific conditions, diabetes and chronic nephritis, all lower the bodily resistance; locally that class of conditions which interfere with free drainage of the naso-sinus ducts, as influenza, diphtheria, whooping cough, scarlet fever, measles and chicken pox. I want to lay particular

stress upon the eruptive fevers, especially when occurring during adult life. While children are frequently attacked, their recuperative powers are much greater. In this feverish condition the mucous membranes seem particularly fitted for the reception of individual cultures or an allied invasion of pathogenic armies. These inflammatory conditions occurring after the eruptive fevers are prone to run into a low-grade form of chronic catarrhal inflammations of obscure nature, especially within the sinuses. The most difficult point is to estimate the virulence of the bacteria present. We must be cautious regarding the streptococcus on account of the danger of development of erysipelas or of the infections leading to venous thrombosis or meningitis.

The proper consideration and treatment of these conditions form an important factor in the promotion of the general health of our patients: by eliminating the purulent frontal, ethmoid or sphenoid cases (these cavities being so close to the brain infection often develops and goes on to fatal termination); by successfully treating the factors conducive to disturbed vision, blindness, orbital periostitis, subperiosteal abscess, orbital œdema, orbital cellulitis, orbital abscess, paresis of the ocular muscles, and optic nerve disorders; at the same time removing the causes of many reflex conditions as attacks of neuralgia of obscure origin, bronchial asthma, vomiting of obscure origin and nervousness.

Charles Leslie Rumsey: I regard this subject most timely, as I am convinced that sinusitis is often overlooked by the general practitioner. If a physician's experience will be increased in value by constantly reviewing his physiology and anatomy, it is certainly true in the study of these sinuses. A chronic or permanent closure of the exit of these sinuses is followed by the accumulation of mucus and later pus, giving rise to empyema of the sinus. These cavities or air spaces are lined with mucous membrane, which becomes inflamed by retention of their products. The frontal sinus communicates with the anterior ethmoidal cells and opens at the middle meatus through the infundibulum. The posterior ethmoidal cells are sometimes in communication with the sphenoidal sinuses and they open into the superior meatus of the nose. The maxillary sinus communicates with the middle meatus of the nose. Inflammation of these sinuses generally starts from the nose, catarrhal rhinitis, extending through the infundibulum to the frontal sinus and to the anterior ethmoidal cells, or from the superior meatus

into the posterior ethmoidal cells and sphenoidal sinus, or from the middle meatus into the antrum. The antrum may also become infected through the teeth, which in many cases perforate its floor. Infectious diseases, as the grippe, can also be the cause. The first stage is a thickening and congestion of the mucous membrane, a narrowing of the natural outlet and a retention of mucous secretion within the sinus. This condition is known as a mucocele of the sinus. The final stage is that of suppuration. Without prompt and skillful treatment, necrosis of the bone and the formation of intractable fistulæ may follow in these cases. As the orbit is formed by the bony walls of these sinuses, you can readily comprehend the relationship they would bear to the eye. I recall saving a case of blindness, in my very early career, by unwittingly attending to the frontal empyema in the patient. It at once cleared up the eye condition. The first stage of sinusitis is marked by pain on pressure or percussion over the affected sinus. In frontal sinus disease, headache above the root of the nose is almost a constant symptom, made worse by stooping or straining; abnormal discharge from the corresponding nostril is usually present and neuralgic pain along supra-orbital nerve. In ethmoiditis headache is less constant, while mucous discharge is more constant. In disease of the sphenoidal sinus the presence of pus in the superior meatus is of diagnostic value but is not recognized in its early stages. While the means for transillumination have been greatly improved, I find an X-ray picture gives me greater satisfaction, and recommend the confirmation of a suspected diagnosis by an X-ray plate. Acute and subacute cases, not of dental or polypoid origin, can often be cured by restoring the nasal mucous cavities to their normal state and allowing the natural exit to be restored. If the trouble has existed sufficiently long for the development of empyema or pus with a decided odor, immediate operation is advised. Therefore, it is often within the province of the general practitioner to avoid the consequences of a catarrhal rhinitis by the timely use of his speculum and the proper treatment of the nose.

In conclusion, I am sure my colleagues will add with me a vote of thanks to our illustrious chairman for his able paper, whose methods of procedure are as brilliant as his work.

George W. Mackenzie: With every severe cold there is some

involvement of the accessory sinuses. Ordinarily the involvement is not sufficient to cause any marked discomfort. The symptom suggesting sinus disease is that sense of fullness and pressure, felt at some time in the experience of all of us, in the region of the sinuses affected. They frequently clear up in a day or two under the administration of belladonna, gelsemium, ammonium carb, or some other similar acting remedy. In other more severe cases which do not submit promptly to the indicated remedy, the symptoms of pressure increase until the patient experiences actual pain, usually deep seated in the affected sinus. This pain is more or less intense, depending upon the intensity of the inflammation, the amount of secretion and the degree of retention. The majority of these latter cases will recover more promptly if we combine with the internal remedy such local measures as the application of shrinking solutions, among which we include cocain in 20% solution. The shrinking solutions will usually open up the region of the ostium of the sinus sufficiently to permit temporary drainage, which in some cases is all that is necessary to effect a cure. It is purely mechanical in its effect. In spite of cocain used locally a certain number will escape cure. Of this number some will clear up after removal of the anterior end of a hyperplastic portion of the middle turbinate. In spite of all these measures some, fortunately very few, cases will tend to progress, if not in the acute form at least the chronic. Certain mechanical conditions in the nose predispose the patient to attacks of sinusitis. These same mechanical faults tend, too, to prevent recovery when the condition is once developed. It therefore becomes our duty whenever a patient has suffered one attack of severe sinusitis to inspect the nasal cavity carefully to ascertain if mechanical faults favorable to the development of sinusitis exist, and when found remove them as a precautionary measure against future attacks.

The subject is an important one no less to the general practitioner than to the specialist. Numerous cases might be cited to show that many cases of asthma are secondary to accessory sinus disease. However, perhaps fewer than was originally supposed by those who first pointed out the association.

William H. Phillips: Some two or three years ago, perhaps longer, I had the pleasure of perusing a paper read by my friend, Dr. Haseltine, I think before the Illinois State Society, on "The Relation-

ship Between Bronchial Asthma and Ethmoiditis." So far as I am aware, that paper was the first definite attempt to define at all accurately the type of nasal disease which is apparently most commonly associated with bronchial asthma. I do not state that he was the first to advance the thought that asthma might be a nasal reflex, for that has been recognized these many years. Twenty-two years ago a classmate of mine, Bryson, of Pittsburg, presented a thesis on "Asthma as a Nasal Reflex," but he did not deal with a specific type of nasal disease as the factor.

After reading the paper and discussing the matter at various times with Haseltine and others, I became much interested in his theory and set out to demonstrate it for myself. I have had a varied experience, enough to convince me that there is much truth in his theory, but to convince me also that he has not yet arrived at the real fundamental truth contained in his findings. I saw and operated several cases of ethmoiditis with polypus formation that did not present signs of bronchial asthma. I saw several cases of asthma that did not, so far as I was able to determine, present signs of ethmoiditis. I saw a very few cases in which there was both asthma and ethmoiditis and operation did not seem to relieve the asthma, and finally two cases in which there was asthma and ethmoiditis and in which, apparently, the removal of the ethmoiditis relieved the asthma. If a reflex from the ethmoid is the real cause of asthma, then the great majority of cases of bronchial asthma associated with ethmoiditis should recover promptly after removal of the exciting cause, provided permanent changes, as vesicular emphysema, have not occurred. In my experience this is quite far from being the real truth.

If we study carefully the pathology of bronchial asthma judged from its symptoms and from appearances observed bronchoscopically and then that of the nasal condition most often associated with it, *i. e.*, hay fever, I think we must conclude that the condition is not simply a nasal reflex with the fifth and the pneumogastric as the arc and with a resulting bronchial spasm, but is rather a vasa-motor disturbance as described long ago by Sajous and Bosworth. If one examines a case of hay fever during an exacerbation, the nasal condition presented is a typical complete vaso-motor paralysis. Why look further for an explanation of the accompanying bronchial condition than this same

vaso-motor disturbance? Again polyp formation so characteristic of the hyperplastic ethmoiditis referred to by Dr. Haseltine is but a chronic vaso-motor paralysis also. Now, if we can solve the problem of "Why this vaso-motor paralysis?" we can solve the problem of "Why bronchial asthma?"

One finds that invariably the subjects of this disturbance are in a condition of sub-oxidation. Many of them have other manifestations, as rheumatism, gouty joints, urticarias, angio-neurotic œdemas and tuberculous invasions. Now, the great oxidizing agent in the body is adrenalin, and likewise it is the great vaso-constrictor. If we study adrenalin from a physiological standpoint, we find it performing two very important functions in the body. In the first place, it is the active oxygen-absorbing agent in the red corpucle and hence the important factor in respiration and metabolism; secondly, it is apparently a powerful stimulant to the vaso-motor center, exciting vaso-contraction. If Sajous is correct in his opinion that the posterior pituitary body contains the vaso-motor center, then the amount of adrenalin passing through the pituitary body determines the vascular tonus of the body. If the amount is lowered, dilatation ensues, and this occurring in the adrenals excites greater secretion, and this increased amount in turn stimulates contraction. Thus an almost constant tonus is maintained. But aside from this direct action of adrenalin, the center is more or less activated by the sympathetic, depression or injury of any of the sympathetic centers, the solar plexus, the cervical or carotid plexuses, being followed by great vaso-dilation in the area affected, or a general vaso-motor paralysis with extreme shock. Such depressions may be excited in the abdominal region by certain types of food intoxications; in the nasal regions by the so-called grippe infections or pollen intoxications; in the cervical by draughts or local chillings, and so on. Under ordinary conditions, when not severe, these depressions are soon neutralized by an increased adrenalin production, and, if the infection or irritating agency be controlled, vaso-contraction is again forced and the storm is over.

Now, to what does all this lead us? First, that hyperplastic ethmoiditis, hay fever, bronchial asthma, some abdominal intoxications, etc., are, at least in the beginning, vaso-motor phenomena. Second, that they are due to some agent either autogenous or exogenous

which has a specific depressing influence either directly or through the sympathetic centers upon the vaso-motor center.

In answer to the question why some people suffer so markedly and others not at all from these phenomena, the answer probably is that those afflicted have naturally an inefficient adrenalin system. As a result these people suffer constantly from a sub-oxidation with its resulting accumulation of the toxic products of imperfect metabolism in the circulation—a dietic indiscretion takes place or some unwonted physical or mental exertion; the amount of toxic products rapidly increase; the vaso-motor center is depressed and vaso-dilation ensues. The adrenals cannot meet the new demand and a storm ensues—an acute gastro enteric affection, an attack of migraine, or an asthma, the attack being at the point of least resistance. Again, an exogenous toxic product as pollen, having a specific influence upon the vaso-motor center, fills the air, and we all suffer to some extent from its toxic influence. One person has the symptoms of a moderate naso-pharyngitis which disappear very shortly: another has all the symptoms of a hay fever and often an added bronchial asthma, lasting for weeks or until the pollen has been destroyed by frost. The difference is this: in the one the adrenalin responds promptly to the increased demand, in the other it cannot, and vaso-dilation continues until the depressing element is removed. Two people are subjected to repeated grippe infections or constant nasal irritation from septal deflection, the one develops a red, thick, spongy mucous membrane with nasal obstruction, a true hypertrophic rhinitis. The other develops a pale, soggy, serum-soaked membrane with polyps and polypoid degenerations. The first is an active process the result of hypernutrition from constant irritation, with new tissue formation: the second is a sluggish, paretic, vaso-dilation, inactive, with no effort at repair. The first may have as much nasal obstruction as the other, but, while breathing may be uncomfortable, he never develops typical asthma. The second does often.

Now perhaps you see what I mean when I say that, while we owe much to Dr. Haseltine for bringing forward the fact that it is peculiarly this type of nasal disease which is associated with asthma, I am not wholly in accord with him when he says hyperplastic ethmoiditis is the cause of bronchial asthma. While it is true the

obstruction to nasal respiration present in this type of disease may act as an efficient irritant to excite asthma, yet any other obstruction than this peculiar one would probably act just as efficiently if the underlying adrenal insufficiency were present.

In a general way as some evidence that adrenal insufficiency underlies most cases, witness the fact that there is nothing known in medicine which will give the magic relief to bronchial asthma attacks that an intra-venous injection of adrenalin or hypophysin will give. Again, in the line of drugs, those which have been found most efficient in old school are morphin and iodid of potash. Morphin like adrenalin acts as a powerful stimulant to the vaso-motor center, while iodin, as is well known, profoundly affects the thyroid and adrenals, increasing their secretions. In our own school Dr. Hinsdale mentioned in his discussion arsenic and arsenic iodid, ipecac and antimon tart. In their physiological actions all four of these drugs run very close to each other in the marked asthenia, vomiting, intestinal disturbances, pulmonary symptoms, lowered blood pressure and skin affections produced. Compare the toxic action of any of them with the symptomatology of Addison's disease, in which, from adrenal destruction, there is an insufficiency or abatement of adrenalin production, and note how closely they correspond. Is it not more than likely that these drugs in toxic doses directly depress the adrenals, or unite chemically with the adrenalin in the circulation and neutralize its effect, and in homeopathic doses relieve these conditions by stimulating the adrenals to increased production? Don't understand me as decrying the removal of an hyperplastic ethmoid in the treatment of these cases. In the treatment of hay fever we have long been accustomed to state that hay fever was a stool which rested upon three legs —a general predisposition, a local disease, and a specific poison. Take away any one of these legs and the stool falls. So asthma (bronchial) rests upon the same three legs with the accent perhaps upon the local condition, as in asthma this is of such a nature that nasal respiration is constantly very markedly interfered with. Nevertheless to my mind temporary adrenalin feeding and that remedy which will promote a better adrenal activity, together with exercise in the open air and dietetics, are the prime necessity.

Dean W. Myers: As a preface to what I have to say I wish to

remark that if Dr. Phillips continues to study along the lines indicated by his remarks, he will soon be of the same opinion as some of the rest of us, for, it seems to me, it is not a great stretch of imagination to connect disturbances of the hypophyseal body with polypoid degeneration of the ethmoids. If the theory is correct, that the secretion of adrenalin is controlled by the hypophyseal body and that the presence of adrenalin in the blood has to do largely with vaso-constriction, I believe we can readily accept the theory that stasis produced by pressure from polypoid growths in the ethmoid cells should produce inhibition of adrenalin secretion. Thus we would have a diminished secretion of adrenalin and a general vaso-dilation. This would most seriously disturb the mucous membranes of the respiratory tract and asthmatic symptoms would readily result.

I have been asked by your chairman to discuss the question of eye disturbances secondary to involvement of the accessory sinuses of the nose. I will not attempt to go into the subject in detail, for it is altogether too large a one for the time allotted. However, it seems to me there are one or two points that might be well considered, briefly, at this time. In the first place, there are two classes of conditions directly traceable to ethmoid disease. First, those conditions that may be charged to affections of the nervous system resulting in trophic disturbances within the eye, such as iritis, chroiditis, optic neuritis, neuro-retinitis and glaucoma. Second, changes directly traceable to pressure from encroachment upon the tissues of the orbit by swelling resulting from acute inflammatory processes within the ethmoid cells or the sphenoid or other sinuses. It is particularly of the trophic changes referred to that I wish to speak and briefly call your attention to the innervation. It will be recalled by most of you present that the ophthalmic division of the fifth nerve enters the orbit through the sphenoidal fissure and immediately divides into a number of branches. The branches we are particularly concerned with are the nasal and its divisions sending fibers to the lenticular ganglion. It will be recalled that the nasal branch passes through the orbit and enters the nasal cavity through the anterior orbital canal in the lamina papyracea and is distributed to the nasal mucous membranes in the anterior and superior portions of the upper air passage, being distributed over the upper septum and middle turbinates and other eth-

moid regions. Before leaving the orbit it sends a branch to the lenticular ganglion, which is a small ganglion composed of motor, sensory and sympathetic fibers located just in front of the sphenoidal fissure in the orbital fat. The motor root is received from a division of the third nerve, the sensory root from the nasal branch of the ophthalmic, and the sympathetic from the cavernous plexus of the sympathetic. From this ganglion about twenty branches are sent out which comprise the so-called ciliary nerves. They enter the eye ball and are distributed to the ciliary body, the iris, and in fact to every portion of the globe. They control the muscular activity of the ciliary body and iris, provide the nerves of sensation and sympathy and control in a large measure, the nutrition of the eye. It is not difficult therefore to see how any disease of the ethmoid region may, through disturbances of this nerve chain, so seriously interfere with the trophic functions of the eye that any one of the diseases mentioned may be produced. We are particularly interested in the possibility of the development of glaucoma from this source and the work of Dr. Dowling, of Albany, along this line is of greatest interest. Many of you have had the experience of producing sharp, shooting, lancinating pains within the eye-ball by touching certain spots in the ethmoid region with a probe during the process of treatment. We need to make further study of these reflex conditions, but I am convinced that we are warranted, from what we already know, in concluding that the trophic functions of the eye-ball may be so seriously interfered with by intra-nasal disease that a serious chronic uveitis may be set up which will result ultimately in glaucomatous development. Further careful study along this line may shed considerable light upon many cases of glaucoma of doubtful etiology and may help to clear up the etiology of this long obscure condition.

The second condition to which I wish to call your attention is that of disturbances within the sinuses producing direct pressure symptoms. These conditions are purely of mechanical nature. Displacement of the eye ball by empyema of the frontal sinus, of the antrum of Highmore, of the ethmoid cells or even of the sphenoid sinus, the latter being less common, are conditions well known to every practitioner. Tension upon the optic nerve produced by such exophthalmic developments may readily produce serious disturbances of vision. We

have many cases of loss of vision in one eye in which the etiology is entirely obscure or has been in days gone by. I want to call your attention to the fact that in such conditions it is frequently found that the sphenoid cell of that side is involved in a chronic suppuration. In fact some authors go so far as to say that in forty per cent of the cases of sphenoid disease, blindness in one eye is found. A symptom that may be of particular value in early diagnosis of this condition is a central scotoma for color that may appear long before any other symptoms become manifest. Ethmoid disease probably produces more disturbances of the orbit than any other one of the sinuses, although it is not an uncommon thing to have an empyema of the frontal sinus breaking through the floor into the orbit. An empyema of the antrum of Highmore, with complete occlusion of the ostium maxillari, may develop pressure upon the orbital floor sufficient to break upward into the orbital cavity.

These rambling remarks are not intended in any way to be final, but purely suggestive, and I trust they have called your attention to some of the many eye complications that may arise from diseases of the nose and its accessory sinuses.

G. DeWayne Hallett: I have long ceased to doubt the etiological effect of diseases of the nasal accessory sinuses in eye affections, and believe the claims of Dr. Dowling have been sustained by clinical experience.

I have operated acute glaucoma which developed in the presence of ethmoiditis, and binocular cases with the sinus of each side affected.

For the relief of asthenopia I have made partial tenotomy of the recti muscles in patients who later came to operation for ethmoiditis, two cases of which I will report.

Case No. 1, Miss K., had been my patient since 1909, complaining of severe left-sided headache aggravated by use of the eyes at the near point. There was need of weak lenses, which gave normal vision in each eye. The eye muscle condition showed that adduction was but two-fifths of what is considered normal and there was exophoria in accommodation. From time to time exercises of the interni developing an adduction of 35° by the end of the year 1912.

The asthenopia continued, however, and in June, 1913, a partial tenotomy of the left external rectus was made.

In April, 1914, the eye muscle condition registered as follows: In the distance esophoria 1°, in accommodation, exophoria 1°. Adduction was 55° and abduction 7°, and during this period she used her eyes with much greater comfort.

During all this time there was no complaint or sign of any nasal distress.

In December, 1913, following some lessons in swimming, there was a severe acute coryza developing an acute sinusitis, for which she was successfully operated by Dr. Dowling.

Case No. 2, Mrs. A. H. B., had been my patient since 1904. I found her wearing for each eye +1.00 dioptre cylinders with prism 2° base out, and presenting an esophoria of 8° for the distance. She suffered from severe headaches (frontal). In 1906 a partial tenotomy of the left internal rectus resulted in an esophoria of 1°. In 1907 a partial tenotomy of the right internal rectus seemed to be without effect upon the symptoms or the esophoria. Three months later an operation drained a large amount of pus from the anterior sinuses and afforded immediate relief of headaches, which later in part returned, and in 1909 I made a further tenotomy of the right internal rectus, with the immediate result of an exophoria of 5°, which later presented in smaller degree. After this operation patient never had severe headaches. At times before and after the nasal operation there was a variable degree of hyperphoria up to 1.°, but none after the final tenotomy.

In November, 1914, the eye conditions are as follows:

A convex cylinder (+2.) gives normal vision, adduction 20°, abduction 5°, esophoria 2° for distance and in accommodation there is 8° of exophoria. Comments: In the first patient it is believed that no nasal abscess existed to cause the asthenopia at the time it was treated, but presented as an acute infection at a later period.

About Case No. 2 it is believed that for years prior to 1904 she had a chronic anterior sinusitis with acute exacerbations. Attacks of coryza with severe frontal headaches relieved quite suddenly with coincident purulent nasal discharge were fairly frequent.

How material an etiological factor this was in producing the 8 degrees of esophoria present when first examined in 1904 and existing till reduced by tenotomy in 1906 cannot be exactly stated.

A few months before the draining of the nasal abscess esophoria was 2 degrees, and the first record made afterwards showed an esophoria of 1 degree, which later became 3 degrees just before the second partial tenotomy.

Certainly the nasal operation, while greatly relieving headaches, had little effect on the esophoria.

G. J. Alexander: Personally I am led to believe that influenza is more frequently responsible for sinusitis, particularly the kind that tends to linger and become sub-acute or chronic, than any other cause.

The argyrol tampon is an excellent thing, but care should be taken not to leave it in place too long, lest it should defeat its purpose and become detrimental. Five minutes seems to be the time it should be allowed to remain in the nose, whether it be used in after-treatment of a sub-mucous resection of the septum, acute rhinitis or acute sinusitis, etc. When allowed to remain in the nose too long (ten minutes or more) in after-treatment of sub-mucous resections, on removal, the tampon will be dry and stick to the mucous membrane. The latter is swollen and dry, showing numerous tiny bleeding points. The tampon when removed within the proper time slips out easily; the mucous membrane is blanched, shrunken and moist, the tampon also being moist.

When applied as treatment for acute rhinitis, on removal, the tampon will be covered with a thin, clear mucous. This is especially marked in cases of acute sinusitis; on removal that part of the tampon which corresponded to the location of the ostei will be coated with a thick layer of semi-thin, clear mucous, which will continue to empty into the nose for some time after the tampon is removed. Again, the reverse is true when the latter is allowed to remain too long.

For some time I have been trying to decide the actual association of nasal polyps with asthma and had just about concluded that it is not due to the mere presence in the nose of polypi, but to disease in the sinuses, which is responsible for the polyps, and some form of neurosis exerting its influence upon the bronchi. Hence I am pleased to learn that this coincides with the opinions of the speakers here today, though I think the subject is far from being thoroughly understood.

As to hay fever (or hay asthma), I want briefly to tell you about

my experience with a recent case. A woman, fifty-two years old, suffered intensely every year for twenty years with hay fever; was treated for same each season up to the last couple of years. She sought no further treatment, because she had never been improved. This year it was so bad that she was forced to seek treatment. She had three symptoms: A thin watery discharge from the nose, incessant sneezing and she could scarcely breathe on account of asthma. The nasal mucous membrane in the region of the middle meatus, etc., was extremely red but not swollen.

Cocain, twenty per cent solution, was applied to the nose and arsenicum album, 6x given internally. She returned two days later. In the interval she had sneezed but twice and was almost totally relieved of the asthma. The same treatment was repeated once, further treatment not being necessary. The nasal mucous membrane had become normal in color, and the discharge, sneezing and asthma were entirely absent. The treatment alone would speak for a nervous element in this instance at least.

J. Ivimey Dowling: My experience in the treatment of certain chronic inflammatory diseases of the eye, and other functional affections, has been in accord with that of the majority, which was in many instances most unsatisfactory.

Therefore for several years I was groping about in an attempt to find some better way of treating certain of these affections.

The "open sesame" seemed to be relief of the catarrhal conditions of the ethmoid cells and other accessory nasal sinuses. Mere operative treatment, or flushing of the sinuses by means of properly placed canula is not sufficient to induce the best results.

I therefore experimented with various solutions applied by means of a properly sized and placed cotton tampon. By means of this there is an induced depletion of the tissues and cells proximate to the eyes. This will prove efficacious in corneal diseases, conjunctivitis, iritis, diseases of the retina and choroid, and affections of the optic nerve, erratic refractive states and some muscular anomalies of spasmodic nature; *also acute or chronic affections of the nose and sinuses.*

In addition, inflammations of acute and chronic nature affecting the Eustachean tubes, middle ears, pharynx and larynx are materially benefited by this method of treatment.

Effects. The results obtained through this treatment are immediate and remote, pleasant and disagreeable, and are also of subjective and objective kind. The immediate effects are suffusion of the conjunctivas, lachrymation, and increase of an already existing conjunctival congestion, sneezing and flow of mucous from the nose. Intra-ocular and tympanic congestions are lessened, and visual acuity may be rendered more acute. Tinnitus is frequently lessened or controlled for a time.

That actual drainage of the sinuses is accomplished is well demonstrated in occasional cases of acute nature, in which the maxillary sinuses are sufficiently filled with hyper-secretion to overcome the light reflex incident to trans-illumination; *for subsequent to a treatment these sinuses will actually show a positive degree of illumination.* Of course in chronic cases which have progressed to actual empyema, no such effect is noted, for the reason that the mucous linings are too greatly thickened to permit transmission of light rays until after many treatments, or operation has been instituted.

Another most satisfactory immediate effect is the lessening of radiating pains, which may have involved the ciliary nerves, or various branches of the trigeminus. Headaches, which are described as frontal, vertical, occipital or of the entire cranium, are frequently promptly benefited after one or more treatments.

The disagreeable effects are occasionally most positive, and may be noted as a decided turgescence of the erectile tissues of the nose, increase of pains, vertigo and nystagmus.

I have seen these last two symptoms of such severe nature that the patient would be unable to walk without aid, and indeed would fall if left unsupported. These aggravations are not greatly lessened by the use of cocain, but must pass off gradually, and seem to yield most satisfactorily to rest alone.

Frequency of Treatments—The frequency of treatments is governed entirely by the length of time the induced effects persist, and daily treatments may be necessary, and again treatments should be but once a week or even less often.

Continuance of Treatments—A single treatment is often sufficient for the cure of acute head colds, while for the more chronic conditions of the eyes or sinuses the treatment may be necessary over a period

of months or even for several years. The length of time that they may be continued is but evidence of their virtue, for many heretofore progressive diseases of the eye are rendered stationary, while this method is continued.

Disease of the eyes or sinuses that are benefited but not cured through this treatment will often respond to operative interference, after which further use of argyrol tampons will establish a satisfactory result.

Value as Diagnostic Aid for Infection and Indication for Operation. The laboratory researches of Dr. Charles F. Terry, of Jacksonville, Fla., indicate the value of the argyrol tampon as an aid in diagnosing hidden infections of either acute or chronic nature, for in the presence of *pathogenic* organisms there is a distinct bleaching of the tampon, which will change from its normal dark brown color to a yellowish tinge, or even be fully decolorized. This fact is of importance in determining the advisability of operating upon the ethmoid region or sphenoid sinuses. In the event of progressive disease of the optic nerves, or other ocular diseases, in which radiographs seem to indicate normal sinuses, and the pictures show clear, large sinuses, there may yet be sufficient residual infection to influence the progress of ocular diseases, the membranes being infected to the point of saturation, with a resulting osteitis of proximate parts. This condition I have observed in a sufficient number of cases to lead me to state it as a possible cause for some otherwise inexplicable ocular diseases of progressive nature, and in lieu of "idiopathic causes," such origin should be considered in the presence of positive bleaching of the tampons.

Furthermore, a positive reaction obtained in progressive diseases should suggest the advisability of operation, providing some improvement is observed through the use of tampons employed as a therapeutic measure, and this despite the negative result of the radiographs.

Gilbert J. Palen: Among the subjective symptoms of chronic suppurative conditions of the nasal accessory cavities, headache is often prominent.

As a casual factor in the production of headache, these cavities should never be forgotten. If this fact is held in mind by the physician and his patients are afforded a careful examination by a skilled

rhinologist, he will find that many cases of obscure stubborn headache are due to diseased conditions of these accessory cavities and the proper treatment will bring prompt relief in many cases of long standing.

Every successful rhinologist can cite from his personal practice many cases of headache of varying intensity and varying types, many of which were of long standing and had undergone a variety of treatment, which disappeared promptly by attention to the accessory cavities. The opthalmologist is recognizing today that in a certain class of cases in which, although the existing errors of refraction might well account for the headache, the correction of the refractive error has not cleared up the condition, a complete nasal examination should be made.

Headache is not a constant symptom in diseased conditions of the accessory cavities. It may or may not be present. Its presence is a valuable aid in diagnosis, its absence does not preclude a diseased condition. When present, its intensity is no guide as to the intensity of the disease. It may be of a mild type in a severe condition, or a severe type in a mild condition.

There is no classical type of headache in suppurative conditions of the accessory cavities, but a variety of types are found. The pain may be neuralgic, or throbbing or of a dull stupefying type.

The location of the pain is of little value in the diagnosis of the special cavity affected. It may be referred to the occiput, the vertex, the temples, the eyes; it may follow the supra- or infra-orbital nerve.

A common complaint of these patients is inability to concentrate the mind upon anything, inability to retain what is read, inability to memorize properly.

Eye symptoms are common: photophobia, inability to accommodate for the near point as in reading or sewing: pain in the eyes and other marked asthenopic symptoms. Many of the above symptoms are due to pressure upon the septum of enlarged middle turbinates. This class of cases shows a marked tendency to contract "head colds." Every rhinologist can cite a long row of cases in which the removal of the anterior ends of the middle turbinates has stopped the "cold taking tendency."

Periodicity in occurrence is often characteristic of the headache

of chronic suppurative conditions of the nasal accessory cavities. The pain comes on at definite time, very often it is noticed upon arising and disappears later in the day, or the pain may disappear for long periods, but when it recurs again it is of the same type and in the same location.

Inhalations of steam by shrinking the mucous membrane and favoring drainage will often give partial and temporary relief. Yankauer looks upon this as a good diagnostic point.

Harold Foster: In any form of asthma or hay fever the attention should be directed to the upper respiratory tract, because more than fifty per cent of these conditions seem to be directly traceable to local nasal involvements.

Inflammation in the ethmoid cells and even a small obstruction near the cribiform plate are the chief offenders.

Drainage of the accessory sinuses is one of the chief functions of the nose and an obstruction should receive attention. When the seeming cause is the obstruction, the adjacent tissues usually are involved, so the surgical procedure should be done for the purpose of giving the treatment, whether local or constitutional, opportunity of creating a cure.

Hydrastis is a remedy which is very frequently of service in ethmoiditis and frontal sinuitis and even after drainage has been created assisted with Dowling's argyrol tamponade to bring about the desired results.

Geo. A. Shepard, M. D.: The citing of the following case may be of interest: Mrs. M., age 37, called upon me in the spring of 1911, presenting the following history: After suffering for years from nasal obstruction she was operated upon three years ago and experienced marked relief. Has been extremely nervous and "figety" for several years, this condition thought by her family physician to be due to a fault in the pelvic organs. For the last few weeks has had much lacrymation and photophobia of right eye and feeling of pressure at root of nose.

I found upon examination a very low degree of hypermetropia and a slight esophoria. The conjunctiva was somewhat hyperaemic, but there was nothing visible to account for the marked photophobia and lacrymation.

Examination of the nares showed enlarged inferior turbinate, breathing taking place through the middle meatus, and exquisite sensitiveness of the superior turbinate.

Argyrol tamponade caused profuse watery discharge lasting for three days with partial relief of eye symptoms. A second application gave perfect relief. There were no more treatments until the next winter, when the condition responded to the same method. There was no pus, but the profuse watery discharge seemed to indicate congestion in the ethmoid cells.

Burton Haseltine: The treatment of chronic sinus infection is a subject too extensive to be covered in this discussion, but a few general principles should be mentioned. The idea is perhaps too prevalent that surgical treatment alone is efficacious. With our present methods of intranasal cleansing and with the argyrol tamponade, it is often possible to benefit these patients greatly without any surgical procedure. The ordinary nasal spray is an abomination, but the use of special apparatus for flushing the naso-pharynx and the interior of some of the sinuses is to be commended. Intranasal deformities that prevent normal ventilation and drainage are of course to be corrected. Sinus operation should only be a last resort, but when finally decided upon should be of a radical nature, as halfway operations are of little use in chronic conditions.

NASAL OBSTRUCTIONS AS THE CAUSE OF DISEASES OF THE MIDDLE EAR*

By George James Alexander, M. D.,
Philadelphia, Pa.

THE subject of this paper was suggested to me by having recently come in contact with a number of exemplary cases of middle ear diseases found to be secondary to nasal obstructions of various kinds, which have been so instructive that the writer has decided to share with you the knowledge gained from them, and to remind you as general practitioners of the importance of always taking into careful consideration the condition of the nose and throat of all the ear cases applying to you for treatment.

There are four types of these cases.

1. Those coming primarily for treatment of ear conditions who have concomitant nasal obstruction, which may be the predisposing factor in the etiology of the ear condition.

2. Those coming for treatment of a nasal obstruction who, at the same time, have or have had an affection of the ear.

3. Those coming for treatment of both conditions.

4. In those cases with an ear condition that continues in spite of conservative treatment, a nasal obstruction as the exciting cause may be found.

Some of the patients of each of these types, or groups, may be aware of the association of the two processes, while a larger number are entirely ignorant of such an association.

It will therefore be my object, in the progress of this paper, to endeavor to point out those associations and the methods whereby nasal obstruction acts as an etiologic factor in the causation of middle ear conditions.

A superficial review of the anatomy of the parts with these specimens and drawings may aid us to form a mental picture of the location of the morbid anatomy to be mentioned later.

1. The nasal chambers are divided into meati by the anatomical arrangement of the parts. For example:

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a. The inferior meatus is situated between the floor of the nose and the inferior turbinate.

b. The middle meatus is situated between the inferior turbinate and the middle turbinate.

c. The superior meatus is the space between the superior and middle turbinates.

d. The olfactory fissure is the uppermost cavity in the nose, but is not of particular interest on this occasion.

2. The septum, when normal, divides the nose into two equal parts, extending from the anterior to the posterior nasal orifices and forms the median boundary of the various meati; it is composed of cartilage in its anterior half, and bone in its posterior half.

3. The turbinates, inferior, middle and superior, are situated on the lateral wall of the nose in the order mentioned, lateral to, and above and behind which we have the accessory sinuses. For instance:

a. The inferior turbinate forms a part of the median wall of the maxillary sinus.

b. The middle turbinate is on the median wall of the anterior and posterior ethmoid sinuses, and the sphenoid sinus is located at its posterior end.

c. The superior turbinate is placed along the upper border of the median wall of the anterior and posterior ethmoid sinuses. All the sinuses have their oulets (ostei) into the middle and superior meati.

4. The post-nasal space is situated in the naso-pharynx. To either side of this on the lateral walls of the pharynx (in Rosemuller's fossa) is situated the pharyngeal orifice of the Eustachian tubes, with their large cartilaginous posterior lips and small membranous anterior ones.

The presence of nasal obstruction and its causes are so complicated and so closely allied (because they exist together) that it is often quite difficult to decide which existed first and which is the greater offender: For example:

a. The presence of a deflected septum together with a chronic catarrhal rhinitis.

b. Deflected septum with a chronic catarrhal sinuitis.

c. Deflected septum together with hypertrophic rhinitis, or a hyperplastic rhinitis.

d. Chronic catarrhal sinuitis with hyperplastic rhinitis.

e. Chronic sinuitis with hypertrophic rhinitis involving the middle or inferior turbinate or both.

In other words, we must be able to estimate how much of the catarrhal condition is due to obstruction and how much of the obstruction is produced by the catarrhal condition, which has for its end results, in so many instances, one of the forms of the various ear diseases which may manifest itself either in an apparently catarrhal condition of the ear or in a severe acute otitis media; or, on the other hand, end in a chronic middle ear disease.

Indeed, most of the cases of acute otitis media which are often thought to be due to exposure to cold, draughts, foul air, poor ventilation, etc., are not due to any one of these causes, but to acute exacerbations of rhinitis induced by nasal obstruction.

Since nasal obstruction is a constant menace to the middle ear cavity, it is the most important cause of middle ear disease, and we should know the methods by which its effects are conveyed to the hearing organ.

All nasal obstructions cause an inflammation of the nasal mucous membrane in two principal ways.

1. The nasal chambers being the natural channels for the inspiratory and expiratory currents of air, any obstruction to their patency will result in pronounced physiological disturbances. For example:

With every contraction of the diaphragm there is, normally, an inrush of air through the nose; in case of an obstruction the air is rarified behind the obstruction, forming a partial vacuum or negative pressure, which in turn induces a rush of blood to the vessels of the mucosa, resulting, first, in a hyper-nutrition, which is followed by tissue changes that extend by continuity of tissue to the Eustachian tube and middle ear.

Narrowing or stenosis of the lumen of the Eustachian tube by inflammation or swelling adds still further to the impairment of the middle ear.

For convenience I will endeavor to arrange the different forms

of nasal obstruction according to their order of importance, and describe briefly the methods by which they involve the middle ear.

As you remember, I said in another part of this paper it is by means of continuity of tissue, and the presence of altered secretion around, and coming in contact with the pharyngeal orifice of the Eustachian tube.

1. Adenoids of moderately large size and constantly in contact with the inferior orifice of the Eustachian tube; the same applies to a smaller amount of adenoid tissue that is enlarged by an acute inflammatory process. This contact is facilitated by a mechanical motion inward and upward of the lateral pharyngeal wall, including the inferior orifice of the Eustachian tube, in the acts of deglutition and speech. By their obstruction of the posterior nares they cause the secretions to be dammed back into the nose; this secretion becomes altered and decomposition takes place, which in turn produces a secondary nasal obstruction in the form of a hypertrophic or a hyperplastic rhinitis. Another important secondary obstruction often due to their presence is a deflected septum, the result of occlusion of the post-nasal orifices, causing a constant negative pressure in the nose.

2. Deflected septum is the result of adenoids, traumatism, and too little room in the nose. The degree of deflection and its location is important for the following reasons:

An anterior deflection coming in contact with the inferior turbinate causes a hypertrophic rhinitis, while a deflection high up and impinging upon the middle turbinate causes a hyperplastic rhinitis and enlargement of both the middle and inferior turbinates. The same condition prevails when the deflection is in contact with both the middle and inferior turbinates, the result being negative pressure, irritation, inflammation and hypersecretion.

3. Ridges and spurs. The point of predilection for the formation of ridges is in the anterior cartilaginous portion of the septum at its junction with the nasal spine, and often extends backward the entire length of the septum at the articulation of the perpendicular plate of the ethmoid and vomer, resulting in a hyperplastic enlargement of the inferior turbinate.

The favorite location for spurs is the same as that for spines, though they occur at almost any point on the vomer and perpendicular

plate of the ethmoid with the same result as spines, plus a frequent involvement of the middle turbinate, causing the same pathological changes as a deflected septum.

4. Thickening of the septum is frequently found. It occurs high up in the region of the middle turbinates and by constant pressure upon these bodies causes them to become hypertrophied.

5. Hypertrophy and hyperplasia is frequently the result of a chronic catarrh or empyema of one or more of the accessory sinuses, notably the frontal. Chronic rhinitis, while less frequent, occupies a prominent place as a predisposing cause, and, as mentioned under other headings, the mechanical obstructions are surprisingly constant and effective.

6. Polyps are frequently present. They may be situated in almost any part of the nose and are practically always due to a chronic sinuitis, the result upon the ears being the same as in any of the foregoing changes from the normal.

7. Foreign bodies.

8. Packings in the nose.

9. Neoplasms, etc., are less common obstructions affecting the ears.

It is evident from what has been said that all forms of nasal obstructions, through certain common causes, have for their end result in many instances one of the several forms of disease of the middle ear, which we will classify according to the method of Politzer.

a. Acute otitis media.

b. Acute suppurative otitis media.

c. Chronic suppurative otitis media.

d. Chronic adhesive process.

Acute otitis media may exist in different degrees of severity, ranging from a slight reddening of the superior fold of the drum membrane (and usually extending along the handle of the malleus) to a marked redness and swelling of the entire drum membrane. Exudate in the tympanum is often present in varying amount, producing a wet, yellowish-red appearance of the drum membrane, showing a niveau line (the upper limit of the secretion in the tympanic cavity). Again we may find the drum bulging from pressure of the secretion and on other occasions there is a perforation through which is pouring a serous exudate. Pain and impaired hearing are two early symptoms.

There are a great many cases with which all the conditions secondary to nasal obstruction could be illustrated. I will, however, use several of the more recent ones that have come to my notice.

For the first type we will consider Mr. A, age 40 years, a woodworker; sought treatment for his left ear, giving the following brief history:

Two weeks ago he began to have attacks of pain in the left ear, the paroxysms lasting one day each; in the intervening time the attacks of pain have become less severe with increased impairment of hearing and subjective noises.

Otologic examination: Left ear—Drum membrane greatly retracted and grayish-yellow in color; ankylosis of the malleus and a large scar in the posterior inferior quadrant near the umbo (a significant feature). The drum membrane does not move freely, but a very freely movable scar is present. Right ear showed pathological changes that were the result of an attack of scarlet fever at the age of five years—which I will not enumerate.

Examination of the nose revealed a marked deviation of the septum to the right, pronounced thickened ridges on the left or concave side which were in contact with the middle and inferior turbinates.

To the surprise of the patient I advised a submucous resection of the septum. This was done within thirty-six hours, and inside of twenty-four hours after the packing was removed all the pain in the ear had subsided, subjective noises had disappeared and rapid restoration of the hearing followed.

The only treatment to the ear was inflation of the middle ear several times by the method of Politzer.

b. Acute suppurative otitis media begins with a rise of temperature, 101 or 102, chill, severe pain in the ear and impaired hearing.

Examination of the ear on the first day will show a swollen or bulging tympanic membrane which will usually rupture spontaneously on the second or third day, from which there will be a discharge of pus lasting from a few days to two or three weeks, when there occurs in most cases a sudden cessation of the pus followed by healing and closure of the perforation.

Illustrative of this type of ear disease is a young man 25 years

of age, a driver. On January 1, 1914, he was awakened at two A. M. with a severe throbbing pain in the left ear, and frontal headache—cause not known to him. Home remedies were applied. On January 2nd he sent for his doctor, Dr. William Best, who found him in great pain; temperature 102, and markedly diminished hearing. On this day the drum membrane ruptured with a profuse flow of pus and cessation of pain. January 3rd the temperature dropped to normal and on the sixth day he was sent to the writer.

The otologic examination showed, in the left ear, a great amount of pus, sharply outlined, bulging of the posterior superior quadrant of the drum membrane, and a perforation in its anterior inferior quadrant; superior wall of the canal thickened and slight tenderness over the mastoid. Right ear showed injection of the membrane in the superior fold and along the handle of the malleus; the lower half of the drum had a purplish color due to a serous secretion in the tympanic cavity; no bulging.

The treatment for the left ear was daily aspiration and inflation of the middle ear, followed by a strip of plain gauze in the external canal. After seven days of this treatment the condition showed a sudden improvement; on the ninth day the ear was dry, and on the eleventh day a perfect scar covered the point of perforation.

The right ear condition, which belongs to Class A, was treated with one or two applications of carbolated glycerine to the drum membrane on gauze, together with inflation of the middle ear; the injection cleared up in a few days and the secretion a week later.

The nasal findings were as follows: Acute rhinitis, dislocation of the quadrangular cartilage to the left with complete occlusion of the nasal chambers on this side; hyperplasia of all the turbinates, and adenoids. The patient refused the necessary operative treatment indicated for correction of the usual conditions.

a. Chronic purulent otitis media. This disease is the result of all the former conditions, characterized by a constant or intermittent foetid discharge, partial or complete loss of the drum membrane, necrosis of the bone, formation of polyps, cholesteatoma, and an inconstant impairment of hearing. The following case is a splendid example of the above condition.

A young man 27 years of age, laborer, was sent to the author for

treatment of his ears, which he said had been discharging all his life.

Otologic examination: Profuse, foul smelling, thin, grayish discharge from both ears. Right ear, external canal swollen, excoriated and granulations, no drum membrane or ossicles present, necrosis of the attic, polyps on the promontory and coming from the attic.

Left ear, a large polyp filled the entire external canal, removal of which showed loss of the drum membrane and the entire middle ear filled with little polyps. There was marked decrease of hearing in both ears, with loss of weight and cachexia.

Examination of the nose showed an S-shaped deflection of the septum, a small spur on the left side and two large ridges on the right side, anteriorly. Marked hyperplasia of both inferior turbinates. Mouth, large adenoids and large fibrous faucial tonsils. His ears were kept clean and the external canals healed with the use of alcohol.

Inside of three weeks I removed the adenoids and tonsils, did a submucous resection of the septum and removed the hyperplastic tissue from the inferior turbinates. The patient soon began to gain weight and I noticed a great improvement in his health.

The nose and throat were treated first to remove the cause and to improve his health, preparatory to doing a double radical mastoid operation, which followed in about three weeks after the first nasal operation.

d. Chronic adhesive process is the result of attacks of inflammation and secretion in the middle ear, which leave behind organized fibrous bands that extend from the drum membrane to the median wall of the tympanum, binding the drum membrane and malleus down, impeding its vibratory function in sound conduction, causing subjective noises and marked impairment of hearing.

The condition of chronic adhesive process, which is not really a disease, but the result of disease, is mentioned mainly because it is so important, and because apropos of it I have such an excellent case for illustration.

A young man, 26 years of age, machinist, complains of deafness in the left ear as long as he can remember (quite a constant statement in the chronic cases) and does not remember any attacks of pain.

Otologic examination: Left ear—The drum membrane is pale and gray, very much retracted, extremely thin, with sero-fibrinous

deposits on its inner surface; very flaccid, particularly in the posterior half, and partial ankylosis of the malleus. Right ear. Findings are the same, with a greater degree of retraction and complete ankylosis of the malleus; stapes visible through the membrane and Shrapnels membrane replaced by a scar.

Examination of the nose, without shrinking the tissues, shows all the anatomical parts in the nose in apposition with each other. Septum deviated to the right high up, a large spur on the left side, and an enlarged middle turbinate. After shrinking could be seen, hyperplasia of both inferior turbinates, right one the worse, with a posterior end hyperplastic enlargement and adenoids.

The patient refused the advised operative treatment of the nose and throat because an improvement in his hearing could not be guaranteed.

It is important to note that all the cases quoted here sought treatment for ear conditions without any knowledge of or reference to the primary or contributing cause in the nose and throat.

Another important feature to which the writer would call your attention is, that the ear most involved invariably corresponds to the side of greatest obstruction in the nose.

While the cases cited here are adults, children of all ages come in for a goodly share of the various middle ear diseases induced by nasal obstruction.

The uselessness of treating these ear conditions without consideration of the primary or predisposing causes in the nose and throat is obvious.

In conclusion I want to thank the members of the Tri-County Society for this opportunity to present to you the importance of nasal obstruction as the cause of disease in the middle ear.

1831 Chestnut Street.

BEZOLD'S MASTOIDITIS, A THIRD SERIES OF CASES *

By Gilbert J. Palen, M. D.,
Philadelphia.

IN the year 1910 it was my pleasure to review carefully the literature of Bezold's mastoiditis from the time of its description by Bezold in 1881. Subsequent to this, in January, 1911,[1] I published a series of eight personally observed cases and again, in May, 1911,[2] a second series of four cases.

In order to again recall the essential points as described by Bezold in 1881, I quote from my original review of this article. "The condition begins with an acute suppurative otitis media. In the course of days or weeks there occurs increased pain; this either with perforation and slight or profuse otorrhoea, or there may be no perforation. There is present, in many cases, an inflammatory process of the upper posterior wall of the external auditory canal. Eventually the pain locates itself in the mastoid process, which is markedly sensitive. After a varying period of time there appears, in the region of the mastoid tip, swelling and pain with sensitiveness. The muscles over the tip appear raised and the outline of the tip is lost. The swelling then increases anteriorly, gradually filling the retro-maxillary fossa. There is no fluctuation. At this stage the pus may break into the external auditory canal. If the swelling progresses, it can reach downward between the posterior border of the sterno-mastoid and the anterior border of the trapezius, where we have distinct fluctuation. Above, it extends to the superior curved line and downward, deep under the neck muscles, to the upper dorsal vertebrae. Having thus clinically described the condition, he then gives the anatomical reasons for its occurrence and explains why the pus tends to burrow deeply, why it cannot reach above the tip of the mastoid and why it does not

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[1] Bezold's Mastoiditis, Hahnemannian Monthly, January, 1911.

[2] Bezold's Mastoiditis, A Further Series of Cases, Hahnemannian Monthly, May, 1911.

* Read before the Philadelphia Eye, Ear, Nose and Throat Society, November 9, 1914.

reach the exterior of the neck. His reasons are these: The outer surface of the posterior portion of the mastoid tip is entirely covered by dense tendinous muscular attachments which make it difficult for pus to break through at this point. The inner surface of the tip is smooth, the bony wall often exceedingly thin and there are in the tip, especially in adults and older people, large cells, so that pus, gravitating to these cells, can readily perforate through the inner surface of the tip. The tendons of the tip muscles spreading backward, join with the trapezius and are thirdly attached along the superior curved line, so that it is impossible for pus to spread above the tip or base of the cranium. Below the tip, in the digastric fossa, is the belly of the digastric muscle, the occipital artery running along the inner surface of this. Surrounding the entire neck is the superficial fascia; this forms the sheaths for the trapezius and sterno-mastoid muscle. The deep fascia passes down the sheath of the sterno-mastoid, giving sheaths to the large vessels, and forms a firm union with the transverse processes of the spinal column; then, passing over the vertebrae, joins with the fascia of the other side. The digastric muscle perforates this deep plate. Understanding the arrangement of the deep fascia, of the neck muscles and of the digastric muscle, we can understand that pus entering the digastric fossa can, by following the digastric muscle, reach anteriorly in the neck. At this point the pus is prohibited from going to the exterior by the dense fibrous attachment between the parotid gland and the tip muscles and so is forced deep under the neck muscles. Posteriorly, the pus passing from the digastric fossa under the muscles is limited above, as before stated, by the muscular attachments at the superior curved line and in the median line posteriorly, by the ligamentum nuchae. Bezold further states that we may find this form of perforation of the mastoid occurring combined with other forms; in other words, we may have a Bezold's mastoiditis presenting also a swelling over the entire mastoid, due to perforation of the outer plate.

Since my last series in May, 1911, there have come under my care the following additional cases. In recording these only those portions of the record are given which have a direct bearing upon the condition described.

Case I—J. E., male, age 9 years, referred by Dr. W. A. Seibert, Easton, Pa.

Diagnosis—Acute suppurative otitis media, Bezold's mastoiditis (left ear).

May 7, 1911—Acute middle ear condition with profuse discharge for four weeks. Twenty-four hours ago developed mastoid pain and swelling back of ear.

Status—Post-auricular oedema, also directly behind mastoid tip. Distinct fluctuation low down on the mastoid, but the swelling back of the tip was brawny. Case appeared as one having a double perforation, one through the outer surface and one low down in the typical position of Bezold.

Operative Findings—Pus cavity low down and pus escaped from below the muscular attachments posteriorly. A perforation was found in the outer plate about one-half inch above the antral area. This led to cells communicating with zygomatic cells. Low down posteriorly on the inner surface of the tip there was a very large defect. The entire substance of the mastoid, which was quite cellular, was broken down and filled with granulations and pus. An unusual condition found in this case was a necrosis of the posterior wall of the canal, which seldom occurs in acute cases.

Case II—C. B., male, age 6 years, referred by Dr. Weiss, Philadelphia.

Diagnosis—Chronic suppurative otitis media, acute mastoiditis, perisinus abscess, Bezold's mastoiditis. (Left ear.)

June 11, 1911—Measles five months ago, during the course of which the left ear became painful and discharged. Immediately following measles the child developed tonsillitis. Seven weeks ago typhoid fever. Ear continued to discharge freely, a thick muco-purulent discharge. Twenty-four hours ago developed swelling back of left ear. This increased very rapidly.

Status—Swelling posterior to left ear extending over mastoid and into the neck, also upward well into the scalp over temporal and occipital regions. There was tenderness over the mastoid antrum and tip.

Operative Findings—A fistula was found over the antrum area and a probe could be passed into the antrum. The mastoid process was broken down and contained pus and granulations. There was a defect in the tip leading into the digastric fossa. The lateral sinus

was exposed for a distance of one-half inch and was located low down in the process.

Case III—J. W., male, age fifty-eight years, referred by Dr. John Fischer.

Diagnosis—Bezold's mastoiditis, perisinus abscess. (Right ear.)

June 13, 1911—Had la grippe in the winter, followed by buzzing and sticking in right ear. Two weeks ago swelling appeared in the neck. This was just below the parotid region and extended to the angle of the jaw. At the upper part of this swelling it was boggy, the remainder quite brawny and extended to a conical point down in the neck. The entire swelling was painful and sensitive.

Status—Oedema extended up over the mastoid. The external auditory canal was swollen in the outer portion so that can see but a very small portion of the drum, which appears grey. There was no discharge.

Operative Findings—Upon incising, pus escaped from the upper portion of the neck. Mastoid tip very dense. There were large broken down cells in the tip containing pus and granulations. The inner plate over the sigmoid sinus was necrotic throughout. The sinus wall appeared healthy. There was an area of necrosis above the line of the antrum, removal of which exposed a large area of the dura.

Case IV—F. S., female, age thirty-two years, referred from dispensary.

Diagnosis—Chronic suppurative otitis media, Bezold's mastoiditis (Left ear.)

November 22, 1911—Aural condition developed at the age of four years, acute otitis media with discharge from the left ear. This has continued at intervals, being worse when she takes cold in the head. Present trouble came one week ago with pain in the left ear accompanied by temperature. In a few days pain in the mastoid region and sudden appearance of swelling in the neck, just below the tip of the mastoid.

Status—Large defect in the anterior portion of the drum with a polypoid condition posteriorly. There was an offensive muco-purulent discharge from the middle ear.

Operative Findings—Dense cortex was encountered, antrum showed nothing abnormal, the mastoid tip was necrotic with a defect in the tip.

Case V—E. F., male, aged 7 years, referred by Dr. Lee, Darby, Pa.

Diagnosis—Acute suppurative otitis media, Bezold's mastoiditis perisinus abscess. (Right ear.)

February 27, 1912—Four weeks ago cold in the head. He dates his pain in the ear from this time. Six days later discharge appeared, relieving the pain to a considerable degree. Ear continued to discharge, with occasional attacks of pain. One week ago developed swelling posterior to the right ear, which was not painful, but his neck was stiff. He developed chilliness, fever and sweating.

Status—Post auricular swelling on the right side, limited above by the superior curved line to the occiput. Posteriorly by the posterior edge of the sterno-mastoid muscle, anteriorly by the angle of the jaw. The swelling obliterated the retro-maxillary fossa and extends downward for a distance of four inches. There was tenderness over the mastoid antrum, but more particularly over the tip. There was a muco-purulent discharge from the canal. The drum was injected, thickened and bulging with a perforation in the lower anterior quadrant.

Operative Findings—After incising the skin and division of the fibers of the sterno-mastoid muscle there was an evacuation of pus from beneath the muscle. There was a fistula through the inner plate of the mastoid leading directly into the neck. The lateral sinus was exposed by the necrotic process for three-quarters of an inch.

Case VI—J. B., male, age twenty-eight years, referred from dispensary.

Diagnosis—Bezold's mastoiditis. (Right ear.)

November 5, 1913—No previous ear trouble. Four days ago was riding at an open window of a train when he developed pain in the right ear. A few hours later sensitiveness upon motions of the jaw and a crackling in the ear. Two days later discharge of light red color.

Status—No discharge from ear. Posterior outer wall of canal sunken, obstructing view of the drum. There was a swelling below and behind the tip of the mastoid, limited above by the superior curved line of the occiput. There was tenderness over the site of the antrum.

Operative Findings—A large mastoid process. No fistula externally. Mastoid cavity broken down and in the tip a very large cell with a fistula in the outer surface, beneath the attachment of the sterno-mastoid muscle.

Case VII—R. B., male, age forty-three years, referred from dispensary.

Diagnosis—Bezold's mastoiditis. (Left ear.)

February 28, 1914—Present trouble came on six weeks ago, associated with a cold in the head. Severe pain in the left ear with dull hearing. Drum was opened at the University Hospital. Profuse discharge from that time on.

Status—Muco-purulent discharge, drum swollen and a perforation present posteriorly. There was a post-auricular swelling over the lower portion of the mastoid tip in the retro-maxillary fossa. This was brawny and was not sensitive and did not fluctuate.

Operative Findings—The antrum contained pus and granulations. The tip of the mastoid was quite cellular, but there was no fistula discoverable.

Case VIII—M. S., female, age twenty years, referred by Dr. H. Everhard.

Diagnosis—Bezold's mastoiditis. (Left ear.)

March 21, 1914—Five weeks ago severe cold in the head. Three days later pain in both ears. Dr. Eberhard opened both drums. Discharge was free from both ears. One week ago swelling appeared in the left side of neck below the mastoid.

Status—No discharge from external canal. The drum of the right ear, except for a little injection along the manubrium, was normal. Hearing normal. There was a swelling in the left side of the neck below the tip and somewhat posteriorly. The tip could not be outlined. This swelling was not painful and does not fluctuate.

Operative Findings—Very small mastoid process, consisting of a very small antrum and one large cell in the tip, which was necrotic and contained granulations. No pus. There was a large fistula in the under surface of the mastoid.

Case IX—E. P., female, age twenty-five years, referred by Dr. Cornish, Sharon Hill, Pa.

Diagnosis—Bezold's abscess, perisinus abscess. (Left ear.)

March 26, 1914—Present condition started three weeks ago with tonsilitis, the left tonsil being more involved than the right. Four days later earache in the left ear, followed by discharge which continued profuse. Five days ago tenderness over the mastoid. Two days ago

swelling occurred over the tip and in the neck, with considerable stiffness of the neck.

Status—The canal is narrowed and there is a muco-purulent discharge.

Operative Findings—Fistula in the mastoid tip beneath the muscular attachment. The antrum was small. The tip was large and broken down. There was a large exposure of the lateral sinus.

Case X—J. W., male, age fifty-seven years, referred by Dr. J. H. Weil.

Diagnosis—Bezold's mastoiditis, perisinus abscess.

April 8, 1914—Six weeks ago pain in the right ear, followed by discharge, continuing until two weeks ago, when jaws became stiff. Last night swelling appeared in the retro-maxillary fossa.

Status—Thick muco-purulent discharge from the canal. Swelling on the lower posterior wall of the canal. Some swelling over the lower portion of the mastoid extending into the retro-maxillary fossa, here hard and brawny. Some tenderness around the mastoid tip. Mastoid operation was advised, but patient refused until ten days later; at this time the condition locally was about the same.

Operative Findings—The mastoid was found to consist of a very dense cortex. The antrum contained granulations but no pus. The mastoid process consisted of large cells broken down and containing granulations. The inner plate was necrotic throughout, exposing the entire lateral sinus in its course through the mastoid and a large area of the cerebellum.

Case XI—F. D., male, age twenty-four years, referred from dispensary.

Diagnosis—Bezold's mastoiditis, perisinus abscess. (Left ear.)

October 17, 1914—No previous ear trouble. Present condition came on three months ago following a cold. Had snapping in the ear, with pain, but no discharge. Three weeks ago pain in the left side of face and head and mastoid process; with this swelling appeared in the region below the mastoid in the neck. The pain was worse upon motions of the jaw and he had some difficulty in opening the mouth, due to stiffness. The hearing was dull at times and there was a ringing tinnitus.

Status—Swelling below and behind auricle. The mastoid tip was

masked. Tenderness over the tip of the mastoid, also over the antrum. The posterior wall of the canal was swollen and red. Could not see entire drum. The portion seen was of a dull grey color.

Operative Findings—Very small mastoid process, which contained one large cell broken down and filled with granulations and pus. The antrum was diminutive and a large smooth edge fistula was found on the inner surface of the mastoid, through which a probe passed directly into the digastric fossa. There was a large exposure of the lateral sinus.

As has been stated, the cases cited by Bezold followed acute suppurative otitis media. It is interesting, therefore, to note in this series two cases (two and four), which, while exhibiting the typical picture as described by Bezold, were cases having a distinct history of chronic otorrhoea. (Hedinger records a case in a patient with an otorrhoea of ten years standing. *Zeitschrift fur Ohrenheilkunde Voll.* 4, page 47). The remaining cases followed acute middle ear conditions, with the exception of case eleven, which case presented a very doubtful middle ear history, the mastoiditis seeming to be almost primary.

In seven cases there was discovered a fistula through the inner surface of the tip leading into the digastric fossa; in three cases the fistula was through the outer portion of the tip, but beneath the tendinous attachment of the sterno-mastoid or splenius capitis muscles, In the other case (No. VII) no fistula could be found.

The brawny swelling in the neck, so typical of Bezold's mastoiditis, occurred anterior to the tip in four cases. In four cases it appeared posterior to the tip. In two cases directly below the tip and in one case the swelling extended anteriorly and posteriorly.

Necrotic defects of the inner plate over the lateral sinus with exposure of the sinus, were found in seven cases.

In four cases the canal lumen was narrowed through swelling of its outer posterior portion. This agrees with the findings in certain of the cases reported by me in my first series.

In two cases the drum was intact. In case eleven there was absolutely no history of aural discharge. In case eight the ear drums had been opened, but at the time of operation were intact.

As regards the position of the head, all of these cases presented

the typical appearance of Bezold's mastoiditis, the head being held toward the diseased side. This position, in the author's opinion, is due to the limitation of motion of the muscle and also to the myositis usually present.

Blood examinations were made in all cases, but showed nothing unusual.

The Roentgenographic findings were positive in all cases.

The character of the infection has little to do with the occurrence of Bezold's mastoiditis, it being due rather, as pointed out by Bezold, to the anatomical structure of the mastoid. In this series of cases, cultures of the pus showed pneumococcus, streptococcus and in one case, the white staphylcoccus. On the other hand, it can be said that those cases in which the streptococcus was found, the condition was more virulent and more rapid in its progress and the subsequent course of the case more protracted.

The Bezold's mastoiditis followed the acute suppurative otitis media in from three days to six months, as follows:

Case	1	3 weeks
Case	3	6 months
Case	5	3 weeks
Case	6	2 days
Case	7	6 weeks
Case	8	5 weeks
Case	9	17 days
Case	10	6 weeks

In case eleven there was a history of very vague middle ear pains, coming on three weeks before the onset of the mastoiditis.

Three of this series were in females, the remaining, males. The age of the patient varying from six years to fifty-seven years. This again carried out the findings in the recorded cases, in that the majority of cases occur in males and usually between the ages of twenty-one and fifty years. The very frequent occurrence in adults is due to the fact that we have there large tip cells and to the thin inner surface of Bezold's mastoiditis.

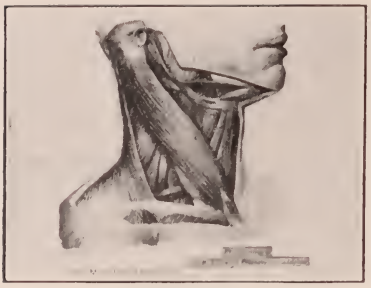


PLATE I.



PLATE II.



PLATE III.



PLATE IV.

The above plates are intended to make more clear the occurrence of Bezold's Mastoiditis.

Plate I. shows the attachment of the sterno-mastoid and splenius capitis to the mastoid tip. It can be seen that the attachment covers the lower third of the mastoid process.

Plate II. The sterno-mastoid muscle having been removed, the splenius capitis is seen and beneath this the posterior belly of the digastric muscle in the digastric fossa, in which position it is in contact, externally, with the inner surface of the mastoid tip.

Plate III. shows the tedinous attachments extending along the superior curved line to the occiput, these attachments limiting the spread of pus upward. The ligamentum nuchae is seen extending downward from the occiput along the cervical vertebrae, this limiting the pus in the median line posteriorly.

Plate IV. shows the digastric fossa and the inner surface of the mastoid tip. Pus issuing through the inner surface of the tip comes then first against the digastric muscle and follows this anteriorly or posteriorly. It can also be seen that pus issuing from the anterior surface of the tip below the line of tendinous attachment will be forced beneath the neck muscles and produce the same type of mastoiditis.

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2022 Chestnut Street, Philadelphia.

THE USE OF HEATED ETHER AND OXYGEN IN NOSE, THROAT AND EAR OPERATIONS*

By R. Franklin Hill, M. D.
Philadelphia, Pa.

THE ideal anesthetic will not be one which will abolish pain without abolishing consciousness. To have the patient aware of surgical emergencies which test even a veteran operator's skill and resources to the utmost would frequently invite death by the terror it might occasion. The ideal anesthetic will abolish pain by the abolishment of consciousness, but without danger to life.

Of all the anesthetics at our disposal today, ether is by far the safest. From statistics collected by Gwathmy, of New York from 1905 to 1911 there were 157,458 administrations of ether by the drop method and a death rate of 28, or one in every 5,623 cases. In the Mayo Clinic at Rochester, Minn., ether is used as an anesthetic exclusively, and not one death has occurred in over 50,000 administrations.

Since 1905 laboratory and clinical experiments have been conducted to show the value of cold and warm anesthetics. It has been found that whatever may be the cause of the loss of body temperature during anesthesia, every fraction of a degree of elevation of temperature of the anesthetic agent above that of the room temperature will have a marked effect in maintaining the body temperature of the patient. Both immediate and delayed after-effects of inhalation anesthesia are reduced to a minimum when the anesthetic is administered warm. The administration of oxygen with ether increases the value of the anesthetic, rendering it safer to the patient without decreasing the anesthetic quality.

By the employment of oxygen with ether the medullary nerve centers which control respiration and circulation do not become paralyzed. This is brought about by the oxygen replacing the normal atmospheric air. When the oxygen is administered warm, from 80 to

* Read before The American Homeopathic O. O. and L. Society, Hotel Dennis, Atlantic City, N. J., July 1, 1914.

85 per cent is absorbed; with cold oxygen only 5 per cent is absorbed. In cases where there is marked cyanosis, dyspnoea, spasm, cough, bronchitis, and in alcoholics and patients with feeble vitality the combination of ether and oxygen is a powerful stimulant, and is very valuable in prolonged and exhausting operations as a corrective to shock.

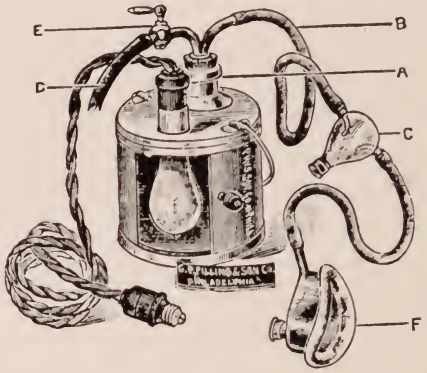
When ether is heated it loses a portion of its odor and this is of advantage to both patient and operator. Heated ether lessens the formation of mucus in the mouth, fauces, trachea and bronchi, as it does not cause irritation of the mucous membrane lining the respiratory tract. Heated ether is more easily assimilated and more rapidly excreted by the lungs, skin and kidneys; owing to the lessened irritation of the mucous membranes and to the absence of mucous formation there is less danger of laryngitis, bronchitis, oedema and post-operative pneumonia developing. During the stage of induction the patient does not complain of dryness of the throat, nor does a cough result, because the pharyngeal membrane is not irritated. Tongue-swelling does not occur and oedema of the glottis has never been present. The color of the patient is more natural. There is an absence of stertor. Patients lapse into unconsciousness with less fear and distress as a result of lessened irritation and the absence of odor. The induction is quiet, the stage of excitement is lessened, complete relaxation and the stage of analgesia are produced more rapidly. Complete anesthesia is produced in from three and a half to seven minutes; a to and fro respiratory current is maintained.

Recovery from the anesthetic is rapid and more quiet. Nausea and vomiting are almost entirely absent, and if vomiting is present the secretions are not ether-laden and do not give discomfort to the patient; no lingering after-taste persists. This method has been employed in one hundred and eighty-seven operations, one hundred and three of which have been head operations.

Brain abscess	4
Bezolds abscess	3
Mastoiditis (Single)	25
Double Mastoid	1
Tonsils and Adenoids	38
Exostosis of Auditory Canal	1
Cleft-palate	1
Fractured skull	3

Brain tumor	2
Trephine for Epilepsy	2
Trephine for Moral Degeneracy	2
Cervical Adenitis	18
Malignant Disease of the Thyroid	1
Sub-mucous Resection	1
Sarcoma Inferior Maxilla	1
Total	103

Hill's Ether Vapor Apparatus.



Description of the apparatus used in the administration of heated ether and oxygen:

A copper can, nickel plated; on the side is placed a sliding door; the door regulates the amount of heat. On top is a Hubbel socket; this passes to the interior of the can for the attachment of a 110 volt carbon incandescent lamp. A 220 volt lamp may be used, but this type gives too great an amount of heat.

There is an opening in the top of the can in which is placed a glass bottle, filled to the neck with ether.

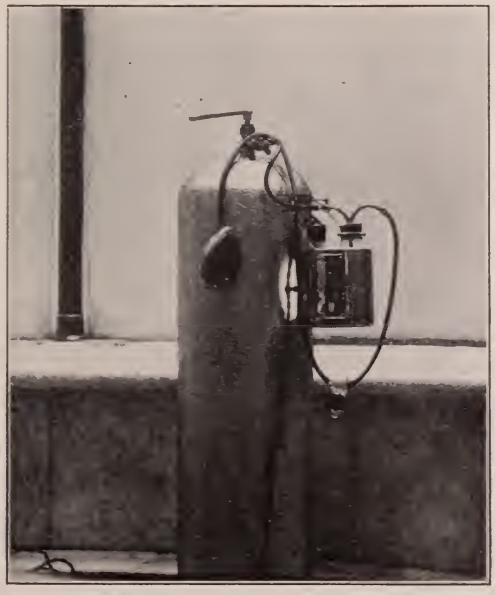
In the figure, A is the glass bottle. A rubber cork with one opening is placed in the mouth of the bottle. Through this opening passes a Y-shaped metal tube. The long arm of this tube conveys the oxygen into the bottle, and reaches almost to the bottom. The short arm extends one-half inch below the rubber cork in the opposite direction from the long arm. This short arm carries the vapor to the patient. On top of the long arm is a stop-cock to regulate the inflow of oxygen. (B) A rubber tube connecting the short arm of the Y-tube to a glass ether condenser. (C) A pear-shaped glass ether condenser. A tube

on each side, passing from the exterior to the interior, conveys the vapor from the rubber tube into the interior of this condenser. The vapor passes out of the tube on the opposite side toward the patient.

This condenser prevents liquid ether from reaching the face of the patient. A screw cap is placed at the bottom of the condenser, allowing the liquid ether to be removed as it collects. (D) A rubber tube connecting the oxygen tank to the long arm of the Y tube. (E) Stop-cock on the long arm of the Y tube, the object of which is to regulate the flow of oxygen from the oxygen tank to the ether bottle. (F) A metal universal face mask. This mask can be sterilized—a great advantage, as it eliminates a source of infection. A rubber tube connects the condenser with the mask.

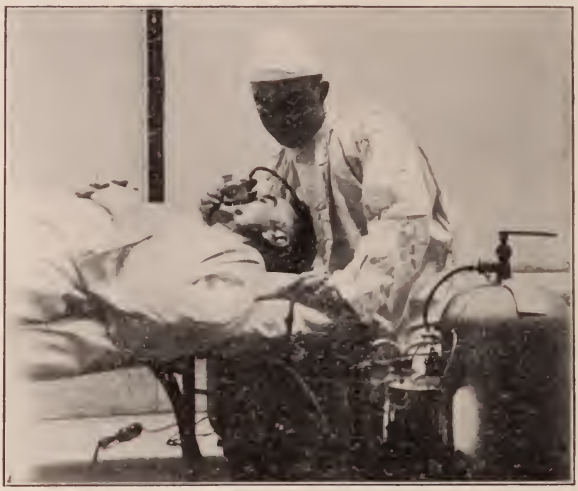
The ether vapor strikes the patient above the bridge of the nose and is diffused toward the nares and mouth, so that the patient inhales it through both nose and mouth.

Heat is obtained from a 110 volt incandescent carbon lamp. The oxygen tank stop-cock is turned slowly, the oxygen flows through the long arm of the Y-tube and passes through the liquid ether. This heats the oxygen with the ether. A little experience with the vapor and the right proportion will soon be found.



Apparatus Complete.

Various appliances may be used, such as tracheal, nasal or oral tubes, instead of the mask. The apparatus is simple, portable, easy to handle and manipulate, and is safe in the hands of anyone. It may be used to advantage in operations on the back, neck, head, ear, nose and throat, and in operations where a cone cannot be used.



Apparatus in Use.

Report of Cases.

1—Radical Mastoid.
Male, aet. 38, alcoholic.
Duration of anesthesia, 2.35.
Ether used, ½-pound can.
Recovery from the anesthetic, 12 minutes.

2—Radical Mastoid and Brain Tumor.
Male, aet. 45.
Duration of anesthesia, 2.43.
Ether used, 9½ ounces.
Recovery from the anesthetic, immediate.

3—Radical Mastoid—both sides.
Male, aet. 7.
Pneumococci in sputum and culture from ear, rales in chest with a marked bronchitis.
Duration of anesthesia, 1.10.
Recovery, immediate.
Ether used, 6½ ounces.

4—Tonsillectomy and Adenectomy.
Female, aet. 18.
Duration of anesthesia, 25 minutes.
Ether used, 2½ ounces.
Recovery, immediate.
No post-operative bleeding, nausea or vomiting.

5—Tonsillectomy and Adenectomy.
Female, aet. 4.
Duration of anesthesia, 20 minutes.
Ether used, 2 ounces.
Large fibrous tonsils and adenoids.
Recovery, immediate.
No post-operative bleeding, nausea or vomiting.

6—Tonsillectomy and Adenectomy.
Male, aet. 4.
Duration of anesthesia, 25 minutes.
Ether used, 2½ ounces.
Tonsils friable, adenoids large.
Recovery, immediate.
No post-operative bleeding, nausea or vomiting.

7—Jejunostomy.
Diagnosis—Ulceration on posterior duodenal wall.
Male, aet. 55.
Duration of anesthesia, 1.10.
Ether used, 7 ounces.
Recovery, immediate.
No post-operative, nausea or vomiting.

Operations for the removal of tonsils and post-nasal growths should be performed under a general anesthesia.

In operations for the removal of tonsils and adenoids the degree of anesthesia should in no case be such that the laryngeal and pharyngeal reflexes are abolished—this prevents the ingurgitation of blood into the air passages, which is responsible for the number of deaths following these operations.

When heated ether and oxygen is employed there are no contra-indications.

It has been used in operations where asthma, bronchitis, in two

cases where pneumococci were present in the sputa, in acute tuberculosis, in a diabetic where an analysis of the urine was made and 5.5% of sugar was present.

In tonsil and adenoid operations the oxygen causes a quick coagulation of blood. This has been found by experiment. The time to produce coagulation with straight ether was 6.5 to 7 minutes, and with heated ether and oxygen the time was from 3.5 to 4 minutes. A record has been made of all cases and vomiting has occurred in only 19 out of 187 administrations. Recovery is rapid and quiet, the odor of ether disappears rapidly, there is no bad effect upon the kidneys.

The apparatus is made by G. P. Pilling & Co., Philadelphia, Pa.

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6026 Catherine Street.

Discussion.

John L. Moffat: I hope that the article will be illustrated in the Journal. The idea of heated ether and oxygen is not new. We have heard of that before, but the apparatus is new and so much simpler than any I have seen that it pleases me.

J. Ivimey Dowling: Who makes it?

R. Franklin Hill: The apparatus is made by Pilling & Son. The cost of an oxygen tank is four dollars. We use about three gallons to a case. The tank is stationary at the hospital. When we have to go outside we carry this small one here. I have given this anesthetic to some very desperate cases with entire success. The son of Dr. Yeager was one. He had rales in chest and pneumococcus in the sputum. After the operation we put him to bed in excellent condition and he recovered. His pulse was 120 before the operation; when we returned him to bed it was 84. The operation was on both

sides. I have successfully anesthetized an infant three months, weighing eight pounds, and an old man of 83 for a radical mastoid operation.

John L. Moffat: How long does the heat last in the portable apparatus?

R. Franklin Hill: With the portable apparatus it lasts from 60 to 70 minutes. At the hospital we can put them under in three and a half to four minutes.

John *L.* Moffat: I have had one or two cases in my experience where ether would not make them unconscious at all. Chloroform had to be used. Will the combination of ether and oxygen put anybody under?

R. Franklin Hill: I had the experience of anesthetizing a woman weighing over 300 pounds for an operation for ectopic pregnancy. She had been given ether and also chloroform without success. I anesthetized her without trouble with six and a half ounces of ether. In case of little children who refuse to lie down they can be brought under by beginning in the sitting posture. We do away with the stage of excitement with this apparatus.

J. A. Campbell: How do you regulate the heat?

R. Franklin Hill: If the heat is too great you open this door here. An old electric lamp does for this heating; the older the lamp the more heat you get. I have used this lamp for 187 cases and it is good yet. You can tell the amount of heat by the way the ether flows. Then you can cool it immediately by just opening this door, and the cold air rushes in. Those of you who go to the clinic at Philadelphia will see this apparatus in operation. You can also know whether there is too much or too little heat; by just holding this to your nose you can tell immediately.

Dean W. Myers: Does the operator get half anesthetized?

R. Franklin Hill: Dr. Clay, Dr. Palen's assistant, suffered much from ether effects at his own operations. Since this apparatus has been used he gets along all right, which answers your question. Very little ether escapes into the atmosphere. Ether vapor is heavier than air and settles to the floor in a quiet atmosphere. It is a knack that comes with practice to know whether all is going on right or not. I can hold it to my face or ear and tell the right temperature in a second. I formerly used my ear, until Dr. Palen told me that I would injure

my ear, so I use my face now. What we use in oxygen we save in ether. I used only a half pound of ether in nine cases. The expense is very small. Ether is more expensive than oxygen. The mask does not fit tightly over the mouth, but just rests on the face and would not be contaminated with vomited matter as a tight mask would, and then it can all be sterilized with ease. There is no irritation of the nose, eyes or mouth. No mucous formation to spit out. There are no contra-indications like heart disease, lung disease or kidney disease. I think that the price of the apparatus is $12.50. I have been working for four years to get something satisfactory and here I think I have it. You do not have to fuss over it with a rubber bulb. The patient awakes up almost immediately after you cease giving the vapor.

C. L. Rumsey. Have you ever tried to use chloroform and oxygen?

C. Franklin Hill: No, I never used oxygen and chloroform.

J. A. Campbell: This is an extremely practical matter, simple, sufficient and effective. I had a woman to enucleate who took one and a half pounds of ether before she went under.

John L. Moffat: There is one limitation to this apparatus: Can you use it in a house where there is no electricity? Can you use it without oxygen if necessary? I would like to ask whether anybody has ever operated on the nose in an upright position. Dr. French has been doing it for a number of years. He begins lying down and gradually lifts the chair up to the sitting position. Very few doctors will do that because we have been taught that it is dangerous. I suppose that it would be safer with this apparatus.

R. Franklin Hill: I have anesthetized only one person in the upright position and it worked very well. It was a week ago yesterday, a sub-mucous resection. He was very nervous; they had tried to do it under cocain several times, but failed. I gave him ether and oxygen in the upright position and had no trouble—no nausea and vomiting.

[The editor would like to add a few words of approval of Dr. Hill's method of administering ether. Dr. Hill has administered ether many times for him in a great variety of cases calling for the use of a general anesthetic. It is his experience that the patient goes under more quickly and quietly; that less ether is required to keep them under; that the patient retains a better color and comes out quicker and with less shock, and less tendency to after bleeding than when ether is administered by the usual drop method.—Ed.]

LARYNGEAL DIPHTHERIA

By Guy M. Cushing, M. D.,
Chicago.

THE subject of intubation is so well understood that any further discussion of it at least for specialists would seem to be superfluous. From my observations, however, I think there is still need for education upon the part of general physicians as to the indications for intubation and the results to be obtained from it. Every specialist should be prepared to do the operation and in communities where specialists are not available general physicians or surgeons should prepare themselves.

It would be difficult to conceive of a more emergent situation than a child choking to death from a laryngeal diphtheria, and yet it is surprising to see how often this disease goes unrecognized and is mismanaged by physicians otherwise well qualified.

Again it is surprising to note the procrastination displayed by physicians when they do recognize the disease, by postponing intubation from day to day with a hope that the suffocating patient will be better within a few hours as a result of some other method of treatment. Finally, when it becomes apparent that the patient will die if not intubated, and the death which ensues is credited to intubation, the family physician goes away with more fear in his heart than before, only to repeat the process with the next case.

An impression seems to prevail that intubation is a difficult operation to perform, that it should only be used as a last resort, and that a fatal outcome is to be expected. As a matter of fact, it is an extremely easy operation to perform, usually requiring but a few seconds. It should be an operation of first resort, and the outcome in practically every case will be successful.

Within the last two years I have intubated eighty cases of laryngeal diphtheria—all verified by culture—and, with the exception of four cases, all are living and well today.

It may be interesting and instructive to know about certain features of the cases that died. One case was a child, four years of age,

who had been sick with a laryngeal diphtheria for five days before a physician was called. During this time he had been treated by the neighbors for croup, and they had employed such remedies as salt pork, old stocking, and various poultices applied to the throat, and nauseating concoctions had been given internally with the assurance to the mother that each of these things had positively cured a like case in their own or some friend's family.

At the close of the fifth day of the disease, other measures having failed, it was decided to call a physician. The physician prescribed remedies and went his way, with instruction to call him up if the case did not improve. At midnight he was called up and told that the child had not slept, and could scarcely breathe. The doctor then called me to intubate, and we were at the bedside in thirty minutes. When everything was ready the patient was lifted out of bed to be wrapped in a sheet; the exertion was too much; there was paralysis of the heart, and the patient died in the doctor's arms before the tube was inserted. We proceeded at once to do the intubation, and employed artificial respiration for half an hour, but our efforts were futile. This case never had any antitoxin, and was badly managed from the outset. Early intubation and large doses of antitoxin should have saved this case in my opinion.

Another case was treated by a physician for five days on the supposition that the child had croup. No antitoxin was given and no cultures were taken. The parents became dissatisfied and called another physician, who, recognizing the condition as laryngeal diphtheria, called me to intubate the case. When I arrived, twenty minutes later, the child was practically moribund. The intubation was performed without difficulty, and the child was given 5,000 units of antitoxin. This case died six hours later. In my opinion, if the first physician had correctly diagnosed the case and given a large dose of antitoxin and had the child intubated within the first thirty-six hours, the results would have been favorable.

The third death was from pneumonia in a child poorly nourished and living in an extremely bad environment. This death occurred three weeks after the intubation, which probably had nothing to do with it.

There are certain interesting features in connection with seventy-

six cases that recovered. I was impressed with the frequency with which the cases were first diagnosed as croup and treated along this line for three or four days in several instances before the doctor realized that the patient had laryngeal diphtheria, and yet the differential points in the diagnosis are so definite that there is really no excuse for the error. Every one of these cases had at least ten thousand units of antitoxin, and some as much as thirty thousand units. In every instance the relief was instantaneous following the introduction of the tube.

All of these cases carry some temperature, and the so-called croup is present in the day time as well as at night. True, spasmodic croup or laryngismus stridulus is a nervous affection, and is not accompanied by rise in temperature. It occurs only at night.

Catarrhal croup is a disease of darkness. It occurs at night. It disappears in the morning, and may recur the next night. It never extends from one night through the day, to and through the next night. It rarely is accompanied by a temperature above 99° F.

A case that is croupy the first night, with the so-called "croup" extending through the day, and growing worse the second and each succeeding day and night, will be found to have a temperature ranging from 100 to 102 degrees, and is not a case of croup at all, but is a case of laryngeal diphtheria, and the diagnosis can be verified by the culture and microscope.

It takes an ordinary case of laryngeal diphtheria from four to six days to die without any treatment at all. There is scarcely a case in which some physician is not called before the fourth day, and if antitoxin and intubation are employed at once, the results ought to be uniformly good.

If, on the other hand, he employs other measures until he discovers on the fourth, fifth or sixth day that the case is slipping away from him and then employs intubation, the results will probably be uniformly bad, and the blame will be placed on the operation rather than upon the management of the case, where it rightly belongs.

It is no doubt true that many cases have recovered from laryngeal diphtheria when neither antitoxin or intubation were employed. It is certain that many have died that were neither intubated or given antitoxin; and it is probably equally true that some who have been intu-

bated and given antitoxin and have recovered, might have recovered without these measures. In any event, the lives of many have been saved by their use and no doubt the patients who recovered without them would have had a much more rapid and comfortable convalescence if they had not been deprived of these methods of treatment.

The technique of the operation is so simple that the whole procedure can be carried out within five minutes after the operator arrives. The instruments should always be kept in readiness, each tube with a thread in it so that it can be used on a moment's notice. The instruments required are the tube, the introducer and a mouth gag.

The patient is rolled in a sheet, the arms being placed at the side like a papoose. Some member of the family then sits down on a straight-backed chair and holds the patient on his lap, allowing the legs to drop between his knees, thereby enabling him to hold the patient firmly and prevent kicking and struggling. The patient's arms are held firmly and his head rests upon the left shoulder of the one upon whose lap he is sitting. Another assistant stands behind the chair and holds the patient's head firmly.

The operator then introduces the mouth gag, which is steadied by the second assistant, and then, the tube being placed on the introducer, which is held in the operator's right hand, the forefinger of the left hand is introduced into the patient's mouth, passing straight back over the tongue until the epiglottis is reached. This is lifted with the tip of the finger, and, with the finger as a guide, the tube is passed into the laryngeal opening, which lies immediately in front of and is covered by the epiglottis. As soon as the tip of the tube becomes engaged the introducer is released, and as it is lifted out the tube is pushed down into place, and the operation is over.

The only error one can possibly make is to miss this opening, in which case the tube will be passed into the esophagus. Should this occur, it can be withdrawn by pulling on the thread. A second attempt will probably be rewarded with success, as will be evidenced by an immediate relief in respiration, accompanied by coughing.

I usually leave the tube in from five to six days, unless the patient coughs it out sooner. If this occurs, and respiration is still difficult, I re-intubate. If not, I am saved the trouble of removing the tube, which, if anything, is slightly more difficult than its introduction. To

remove it, everything is prepared as for its introduction. I use the same instruments for both introducing and extracting the tube. The finger is inserted into the patient's mouth, the epiglottis is raised, the tip of the extractor is introduced into the tube, and the tube lifted out.

Three things are essential in both the introduction and removal of the tube—First, the patient's head and body must be held absolutely rigid; second, the operator must either sit or stand directly in front of the patient, and third, all instruments must be carried in exactly the median line. If these rules are not observed much difficulty will be encountered, and I believe that much of the dread which some operators attach to the operation comes from not observing these three points.

The conclusions which I wish to draw are these:

First, that every case of laryngeal diphtheria with dyspnea should be intubated, no matter what other treatment it may receive.

Second, that any case of croup that persists through the day, with an accompanying rise in temperature, is a case of laryngeal diphtheria, and should be intubated.

Third, that intubation should be an operation of first resort, rather than an operation of last resort.

Fourth, that it is not the operation in these cases that kills, but the delay until such time that the patient has become so thoroughly saturated with toxins and carbondioxide that he cannot respond to anything.

Fifth, that intubation is not to be considered a curative measure. It merely keeps the patient from choking to death while other measures bring about a cure.

Sixth, that in such cases as might not die without intubation, the recovery is made more tolerable to the patient than would be the case if allowed to pursue the usual course without the operation.

6400 Harvard Avenue.

LIP READING FOR THE SLIGHTLY DEAF

By Gertrude Torrey,
Chicago.

THE ordinary conception of the art of lip-reading is altogether wrong. It is usually considered the last resort of the hopelessly deaf. It ought to be considered the first resort of even the slightly deaf, if the case is beyond medical help.

A man or woman who, because of deafness, is not able to follow an ordinary conversation, is under an enormous handicap. From the moment that the fact is recognized, he is subject to limitations of various kinds.

The thought of his deafness is always in the minds of his associates, and unconsciously this thought affects all intercourse. Even if one becomes an expert lip-reader, it is hard to live down the reputation for being deaf. The first thought of deafness still exists in the minds of friends, and limitations are still imposed upon one. Obviously, the way to avoid this is to learn lip-reading as soon as an incurable case of deafness is diagnosed, and to learn it so well that deafness will never become fixed in the thought of those around us. This is the one thing that makes a normal life possible. And yet very few people realize the difference that the early mastery of lip-reading will make.

Almost always, those who are slightly deaf, say: "Surely I am not yet deaf enough to need lip-reading." Every aurist tells me the same thing. Some say that in some cases they do not like to advise lip-reading, because it discourages the patient. Some say that if they advise it, a patient believes nothing can be done for him, and he may stop treatment that will be beneficial.

Isn't it possible to make a patient understand that he must learn lip-reading, not because of what he is going to lose physically, but because of what he is going to gain through his ability to read the lips.

In fact, lip-reading should not be regarded as merely one of the "aids of hearing." It is in the nature of a supplementary education,

and is itself a method of mental improvement, very much like the study of a new language or an art. It is one of the means of educating the faculty of perception, and may be studied with advantage even by perfectly normal individuals.

No one disputes the fact that the totally deaf ought to be lip-readers. The advantages of lip-reading for the slightly deaf should be as readily admitted. And when it is realized how much unhappiness can be avoided by the early mastery of the art, I think that there will be only one opinion on the question.

Those who have been deaf for a long time usually accept the inevitable more or less unwillingly, and readjust their lives to new conditions. It is those who are partially deaf who have the tragic sensitiveness that often accompanies deafness. They are the ones who believe that nothing will be left to make life worth living. Every slight incident that makes them realize their defect more clearly brings suffering. As a result of this state of mind the character often changes, and one acquires habits of thought which last a lifetime. Self-pity, suspiciousness, hopelessness and selfishness are sometimes associated with the deaf as a class. If these qualities develop at all, it is during this period, and as a result of the constant realization of loss caused by deafness.

Why not avoid the results by removing the cause before such developments?

Lip-reading eliminates the handicap of deafness, and the mental attitude changes. Instead of the sense of loss being dominant, the sense of gain becomes dominant. We are gaining something all the time. We are getting more out of conversation, more out of companionship, more out of life. The future holds all possibilities. The old limitations, imposed by others, do not exist, and when we realize that our own ideas are our only limitation, and that we cannot hold the Lord, or or own grandfathers, or the doctors responsible for our lack of achievement, we usually go to work and accomplish as much as anyone else.

The mental change is usually noticeable in my pupils when they acquire even a slight proficiency in lip-reading. I believe the difference in their point of view accounts for a great deal. If a man is deaf and loses half a conversation, he is depressed. If he is trying to read the

lips and understands half a conversation, he feels that he has achieved something worth while. And we all know the feeling of satisfaction which comes from even the partial success of a hard undertaking.

Sometimes pupils tell me that before taking up lip-reading, the only thing they desired was to get through with this life. I have in mind three young women who have told me this. They are now happy, ambitious girls. Two of them are self-supporting, for the first time in their lives, and the third has made a start in that direction. Of one of these, her physician wrote: "Miss ——'s entire family is thanking me for insisting upon lip-reading. It has changed her to a normal, healthy-minded girl, from one who was despondent to the danger-point."

Of another, a sister said: "I would not have believed that anyone could change so completely in three months. Why —— even *walks* differently!" It was true. The listless walk of a hopeless girl had changed to the brisk walk of a girl full of energy.

There are many more reasons for advocating lip-reading for the slightly deaf, but I will only mention two. One is the great convenience to everyone with whom we come in contact, and the great convenience to ourselves. The other is the relief from ear-strain. No one who has not been deaf can understand the nervous tension that comes from continually trying to hear a little more than we are able. But every physician is familiar with the fact that patients suffering from partial deafness are apt to develop neurasthenia and morbid mental states. I believe that ear-strain is partially responsible for this, for in spite of the labor of learning lip-reading, I find that almost invariably the nervous condition improves when a pupil becomes even a fairly proficient lip-reader.

Some say that they hear so much that they probably wouldn't use lip-reading if they should learn it. If a person can hear everything that is said to him, he doesn't need lip-reading. If he can't hear everything, he will use it continually, though he may not know it, for it is very difficult to tell how much one sees and how much one hears when the sound of the voice is audible. We hear part of a word, and we see the rest; but the impression is that we hear it entirely. This was emphasized very strongly a short time ago at a stereopticon lecture. I happened to have a seat near the stage. The

lecturer had a strong voice, and I could hear him perfectly and understood every word. A few moments after the lecture began, the lights were turned out, and I found that though I could still hear the voice just as well, I could understand nothing that was said. And I then realized that except for the incident of darkness, I should have left the hall under the impression that I had heard every word of the lecture. This is true of all conversation in which the sound of the voice is heard, and lip-reading will always be used unconsciously.

I am often asked if the hearing will not become worse if one depends upon the eyes instead of the ears. Hearing tests do not show this to be the case; and after carefully observing many cases, I have come to the conclusion that a lip-reader uses his hearing as much as possible. And also, that he uses it to better advantage than a deaf man who depends entirely upon his ears. Lip-reading requires great mental alertness and great concentration. And the mind makes use of all the senses in trying to understand. A lip-reader sees and feels more than the average normal, and undoubtedly hears more than a non-lip-reader of the same degree of deafness.

It is not at all unusual for pupils to tell me that their hearing has improved during the course of work, and to cite cases which seem to prove it, in which lip-reading is not a factor. I believe that the improvement is mental, and that they are simply able to make better use of whatever hearing they may have. The synthetic training that is given can be applied instinctively to what we hear, as well as to what we see, and sounds which are indistinguishable for a moment can be mentally reconstructed in very much the same way that the movements we see are reconstructed. I have verified this fact many times when using a telephone.

I have recently met a girl who is an example of what can be accomplished by forehandedness in lip-reading. This girl is now at one of the large universities, preparing for a medical school. Ten years ago, when her deafness first became noticeable, she gave up everything else for a year or so, and devoted her entire time to the mastery of lip-reading. She then went on with her education, still keeping up lip-reading practice. She now depends upon it almost entirely. She speaks French, English and German fluently; also some Russian, and is learning Polish. In spite of the fact that she

has to follow all the lectures by lip-reading, her standing is high in all her work. And the instructor who introduced her to me had had her in his class for more than a month before he found out that her hearing was defective.

This is an exceptional case. Not everyone can have such thorough training, and not everyone has so much ability; but almost anyone can become a reasonably proficient lip-reader, and the sooner one begins, the less one has to overcome.

This applies especially to men and women who have to earn a living. It is always difficult for a deaf man or woman to find a position. Why not learn to read the lips before deafness becomes so noticeable that the work is affected?

And the results of the training in alertness, absolute concentration and quickness of perception become an asset which is valuable in any line of work.

117 Auditorium Building.

A NEEDLE FOR SUBMUCOUS SUTURING AND A NEW INSTRUMENT TO AID IN TYING SUTURES WITHIN THE NOSE

By L. E. Hetrick, M. D.,
New York.

IN the September, 1913, issue of the *Laryngoscope* there appeared an article by Dr. Ostrom, of Rock Island, Ill., on the "Technic And After Treatment of Submucous Resection Without Packing."

This article appealed to me strongly, as I had always considered the pack in these cases as torture and the worst feature of the operation.

I at once began to operate my cases without packing, but I experienced considerable difficulty in suturing with the needles I was able to obtain. The two main obstacles were the fact that the needles were too short and it was with great difficulty that I was able to avoid tearing my flap and that in order to tie the intra-nasal knot it was necessary to introduce the finger part way into the nostril, thus obstructing the field.

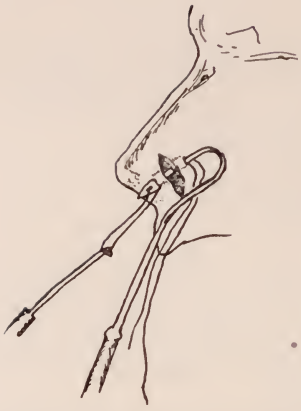
I was thus led to have the needle and aid-in-tying made which may be seen in figure I. The blade of my needle is 18 millimeters long, being 6 millimeters longer than the usual similar needle.

Suturing with these instruments is accomplished in the following manner: The needle is threaded with No. 2 black silk, suture cut to a length of about 10 inches, and pulled through the eye of the needle so that one end is slightly longer than the other. From habit I have the end on the inner or concave side of the needle the shorter of the two. The needle so threaded is introduced into the nostril point up and after the point has passed the inner lip of the incision about

I



II



III



three millimeters, it is rotated point toward the septum and passed through the flap, traversing the mucous membrane and perichondrium. The point is now carefully carried forward across the wound and under the perichondrium of the anterior lip to emerge three millimeters in front of it. Now advance the needle a little farther until the eye and loop of thread appear. Here the hook end of the tyer is thrust through the loop on the concave side of the needle (the short end of the suture) and pulls it through (See Fig. II), while the needle is withdrawn in a manner the reverse of its introduction, unthreading itself at the same time.

The ends of the suture are then gathered up and the first part of a surgeon's knot tied and drawn up to the nostril. The crutch end of the tyer is now placed against the inner thread and the tightening of the knot completed by pushing the instrument into the nostril, as seen in Figure III. The second half of the knot is made by repeating the above procedure.

Usually two such sutures are sufficient to bring the lips of the wound into perfect apposition.

I have, since reading Dr. Ostrom's article and evolving the above technic, used a light pack in probably a half dozen cases, and these were cases in which a considerable tear had unfortunately occurred. Otherwise I use no packing. The patient is much more comfortable and the bleeding and swelling no more if as much as when the pack is used.

4 West 93rd Street.

THE GREAT AMERICAN FARCE—TRIAL BY JURY

By Burton Haseltine, M. D.,
Chicago.

EVERY year or so, in the city of Chicago, occurs what is called a joint meeting of the Physicians' Club and the Chicago Law Club. Nothing is more interesting than to hear these representative men of two professions discussing vital questions and nothing is more striking than their utter inability to understand each other.

By education, habit and experience the legal mind and the medical mind have come to functionate in wholly different ways. The law student begins by studying the oldest authorities and if he can read them in one of the dead languages, so much the better. In practice his chief occupation is finding precedents and his success often depends upon his skill in piling up a ponderous mass of venerable authority. If a rule, method or institution has been in existence for many years it has to his mind merit by that fact alone.

The medical student begins by learning the most modern methods of scientific procedure, and the latest fashions in nomenclature. His practice consists largely in applying the newest real or supposed improvements in his art and his success often depends upon how well he appears to be "up to the minute." If a rule, method or procedure has been in use for many years, he feels pretty sure that it can be improved upon.

It would be idle to speculate as to which of these mental habits is the better. Each has its strength and its weakness and each would undoubtedly be improved by a liberal infusion of the other.

It is a pity that they do not mix more readily. In such joint meetings as those mentioned, it is noticeable that the elements, like oil and water in the same container, get on without the slightest friction, but they do not saponify. If the saponifying element is ever found the result will be an agency for cleansing purposes in civic affairs the like of which has never yet been seen.

Indeed it will be the only agency that can hope to bring about the

reform of certain notorious evils in American jurisprudence, especially those involving medico-legal questions. No other class of cases so readily lend themselves to chicanery and in no others have there been such parodies of justice and such prostitution of two honorable professions. The professional testifier and his procurer are notorious in American courts, civil and criminal, and the ends of justice are but sadly served thereby. Verily, it is easier for a rich man to enter the kingdom of heaven than to go through the door of an American penitentiary unless some other rich man is interested in putting him there. In such causes the competitive display of medico-legal balneation is vastly diverting.

In less conspicuous cases, whether civil or criminal, where medical questions are involved, the result is usually farcical. Every physician experienced in court work knows that if a cause involving medical testimony comes to trial the result is a lottery, with the odds by no means in favor of strict justice.

Without presuming to make an expert analysis of this deplorable situation it can be said without doubt that the persistence of an outworn jury system is one of the chief elements in its production. The institution of trial by jury looms so large in the history of the struggle for human liberty that it sounds like sacrilege to mention it with other than bowed head. In early American history it became perhaps the world's most perfect judicial machine. Possibly even today in many instances it is beyond criticism, although none but a legal mind would expect an institution suited to early New England to fit well into modern metropolitan life.

Certainly in handling present day medical questions it is by its very nature incompetent and ineffective.

It is so, first, by the composition of the jury itself, which is drawn haphazard from the entire citizen mass with few exclusions and among them physicians, the only persons qualified by training to detect medical chicanery or to form competent judgments in such causes. It must be remembered that even the educated American draws his medical information almost wholly from lay sources and that such information is usually distorted to the point of absurdity. If a juror shows evidence of being partly educated in such matters so that he might be presumed to have opinions of any sort, he is usually challenged "for cause."

With the cumbersome machinery of jury selection the high-grade veniremen is subjected to such useless time loss and other inconvenience that he regards such service as an infliction to be escaped in any possible way. With the educated class prone to evade jury service and the undesirable class seeking it, the average of efficiency is still further reduced. The prevalence of fakes and cults is another factor, these being represented in every venire, while scientific medicine is necessarily excluded.

It is obvious, therefore, that under our system no jury can be procured than can give a complex medical question both a clear comprehension and a fair consideration.

This situation is largely inherent in any jury system: A most interesting study of the operations of French juries was recently made by Felix le Dantec, of the Sorbonne, who served for thirty days as juror in the assize court of Paris. Following is a portion of his comment:

"There was one day a question of a drunken woman of the streets whose death had followed a small knife wound in the neck. The knife was not a dangerous weapon, a small steel pocket knife with a dull blade. The autopsy had showed that none of the large vessels of the neck was wounded. It was in fact a very slight wound. The victim died from hemorrhage seven or eight hours afterward.

"Upon the first question, 'Was the wound intentionally inflicted?' the jury voted yes. It was then necessary to vote upon the second, 'Did the wound cause death?' A physician, by chance one of the jurors, explained to his colleagues that cases of cirrhosis of the liver in chronic alcoholics are subject to terrible hemorrhage. This woman was unquestionably a drunkard; one could therefore honestly vote no. The cut did not produce death. It was the alcoholic cirrhosis that rendered fatal a wound insignificant in itself. The poor devil accused of murder was therefore given a light sentence. Suppose, now, that the physician had not been present. Knowing nothing of conditions causing hemophilia the jury would have voted yes and the accused would have been sentenced for intentional murder. It is dangerous to compel men not scientifically trained to pass upon questions of a highly technical nature."

If this were true of juries only it would be less serious. Courts

are often almost equally helpless. This is particularly true in issues involving the more highly specialized departments of medicine.

A striking instance of this kind occurred in the writer's own experience. A suit was brought by a young Italian woman of Chicago against a surgeon who had operated upon her for chronic necrosing ethmoiditis. Hemorrhage occurred four days after operation and the operating surgeon, being too far away to render service, engaged a nearby specialist, who packed the nose and thereafter continued in charge of the case. Two weeks later this specialist removed a tiny fragment of bone from the patient's nose and by the use of this fragment, with the aid of a suitable lawyer, instigated a suit for damages against the operating surgeon. The case came before a judge of the Superior Court of Chicago, one of the most eminently qualified of the Illinois judiciary.

The usual allegations of neglect, mismanagement, etc., were made and were ruled out by the court as without foundation, but one count was allowed to stand, based upon the fragment of bone which, to the mind of the court, seemed suggestive of surgical neglect.

Being a witness to the discussion in chambers, the writer heard the court say that he understood the finding of this particle of bone to be the same as the finding of a sponge left in an abdomen after a laparotomy. This statement was actually made by a judge of the Superior Court of Chicago and the case went to the jury on that count alone!

The defense was then confronted with the well nigh hopeless task of making twelve janitors, barbers and grocers understand the nature of chronic necrosis in a bony labyrinth, and this in opposition to the medical instigator, who was permitted to act as counsel for the plaintiff. The defendant won his case, but the absurdity remains that he was forced into a serious legal fight because of a condition that exists in every case where such an operation is required. The injury to an individual is not important, but what a sad exhibition of medical prostitution and of judicial helplessness!

Such conditions of course furnish a fertile field for exploitation which is not overlooked. If there is money in sight a court case can be made out of almost any medico-legal situation. "Experts" can be found to support almost any hypothesis and in such matters it is

always difficult to establish a negation with absolute certainty. It is like trying to refute the testimony of one witness who saw the act by that of several who did not see it. Under the rules of jurisprudence the result in such causes is sometimes quite other than the facts would justify.

A case seeming to illustrate this point occurred recently in the Circuit Court of Cook County and appears in the published record.

Suit was brought against a life insurance company to recover upon a policy containing a suicide clause and issued less than one year before the death of the insured. The insured was seen to leap over a railing on the thirteenth story of a building and fall to the ground floor, some hundred feet below, death of course, being immediate.

The railing was forty-four inches high, the height of the insured being five feet seven and one-half inches. The insured was shown to have placed both hands upon the railing and vaulted over, somewhat as one would leap over a fence. The circumstances suggested suicide and the coroner's jury so found.

Suit was brought upon the contention that insured did not commit suicide, but fell over the railing from an attack of labyrinthine vertigo, due to an old perforation of the right tympanic membrane. Varying opinions were expressed by witnesses who clearly were not informed upon labyrinthine vertigo, and only one attempted an explanation in support of the contention. His theory was that there was a vertical nystagmus, causing vertigo with sensation of objects moving downward, resulting in muscular effort to correct, with an over-correction, causing the man involuntarily to throw his body entirely over the forty-four-inch railing.

This is amazing testimony to one who knows that labyrinthine nystagmus is never vertical and that an attack of labyrinthine vertigo not only could not produce such involuntary action, but would almost certainly render such an act impossible even should the patient desire it. However, this being a point upon which many doctors are confused, the court, counsel and jury were all helpless, and, as the phrase goes, he "got away with it." The verdict was for the plaintiff, based chiefly upon this testimony, aided no doubt by the well-known tendency of juries to find "against the company."

Another situation in which the testimony even of an honest witness

may miscarry, is shown by an instance related to the writer by a physician of a neighboring State. A laborer employed by a manufacturing concern brought suit for damages because of blindness due to disease of both optic nerves. Several years before bringing the suit the plaintiff, while working in the factory, had received a blow upon the head, followed by some inflammatory conditions about the eyes, and it was to the effects of this injury that the patient attributed his blindness. When first seen by the physician testifying, two years after the injury, the patient was clearly suffering from syphilis, as shown by clinical signs, by positive Wassermans and by the results of suitable treatment. The optic nerves showed the effects of syphilis and it is the physician's opinion that the blindness resulted at least partly from that cause. Under the rules of evidence, however, his examination was so conducted that he was prevented from expressing such an opinion and to a non-medical jury his testimony would appear to mean that he attributed the blindness wholly to the effects of the injury. The verdict was of course for the plaintiff, which may or may not be in accordance with strict justice. The point is that this witness was sworn to tell the truth, the *whole* truth, and then by the rules of evidence was prevented from doing so.

In criminal cases, of course, the greatest travesties occur and the worst evils of the system are to be seen. Here we have added to the defects of the jury system a most unfortunate arrangement for public prosecution. This defect is a peculiarity of the American system. In both England and France the public prosecutor is free from personal interest in the outcome of a criminal trial. The commonwealth is not interested in a high record of convictions *per se*. It is as much concerned in withholding unmerited punishment as in inflicting punishment where deserved. Its methods of procedure should be free from trickery and its agents should strive to develop the exact truth in all cases, whatever the outcome.

Instead of this we have usually a public prosecutor elected because of various political activities rather than because of high judicial talent. His very election often means that he has formed some alliances that will materially influence his activities while in office.

His success in office and his future career depend upon his tempering his zeal in certain special instances and upon his making in

general a high record of convictions without much regard for abstract justice.

Who ever heard of a State's Attorney who was famous for his zeal in finding or in using evidence except where that evidence favored conviction? Every man experienced in such matters knows that if he has information tending to prove the innocence of some one under indictment, the State's Attorney's office is the last place where he is wanted unless it be to suppress or to distort his information. Such an attitude upon the part of the defense is natural, but in the agent of the commonwealth it is altogether vicious.

The deliberate manufacture of evidence by public prosecutors is not unknown. This is sometimes excused on the theory that "it takes a thief to catch a thief," one of those utterly silly sayings that so often take the place of intelligent argument. Surely it is not necessary that our criminal courts should furnish exhibitions of one set of crooks fighting another. A State's Attorney may be honest and an expert witness may be unpurchasable, but under the American system these qualities are not fostered to any appreciable extent.

This fact is not known merely to one inconspicuous member of the medical profession. If the lawyer wants "citations" they are at hand in plenty. Following is the opinion of a prominent member of the New York Bar, who is admitted to the Supreme Court of the United States:

"Speaking further of prosecuting attorneys, Federal and State, fully nine-tenths of them would prefer to convict an innocent man than to fail of convicting someone for a notorious crime; and if placed in possession of evidence that would positively acquit a man on trial even for his life, would suppress the evidence if they could and do their best to hang the man. This is a horrible statement to make, but this writer has made it from one end of the country to the other and has never been disputed by anyone conversant with district attorneys and their habits, excepting by a district attorney as to himself. They may not realize what they are doing and are shocked and indignant when the matter is mentioned, but their professional zeal for successful prosecutions stamps out the natural goodness of their hearts and makes them a species of human hyena. It is a recognition of this fact that

accounts for the agitation in favor of appointing public defenders to see that the accused gets a square deal."*

If this eminent jurist ever writes his opinion of the American jury system it may put a dent in the sacredness even of that venerable institution.

The recognition of defects is of course valueless unless the recognition in some way indicates a remedy. If the layman is presumptive to criticise, he is perhaps foolhardy to advise, but a few suggestions seem obvious.

First, a change in the methods of selecting and handling jurors so that the high-grade citizen will not so often be eliminated; second, a provision for the employment by the State of qualified and impartial experts in technical questions. This means that such experts in matters of remuneration and in all other ways must be wholly unconnected with the parties in controversy. Such experts would often lessen the cost of court procedures in making unnecessary the cumbrous and expensive jury; third, taking the office of public prosecutor out of politics and giving to the office a dignity and remuneration independent of its record for convictions.

These things sound utopian, but if the lawyers and the doctors ever come to agree that they are good, they will find the public more than ready to receive them. Until then in the words of a great Frenchman:

"Nous parlerons contre les lois insensées jusqú à ce qú on les reforme, et, en attendant, nous y soumettrons aveuglément."*

122 South Michigan Avenue.

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*Hon. Oscar J. Smith in *The Lawyer and Banker,* October, 1914.

*We will talk against foolish laws until some one reforms them and while waiting we will submit to them blindly."—*Diderot.*

POST-GRADUATE EXPERIENCES IN CHICAGO

By Ed. Bywater, M. D.,
Grant's Pass, Oregon.

FORTUNATELY I arrived in Chicago with a corneal ulcer, due to a cinder from our engine getting into my eye at Portal, North Dakota, and which I was unable to remove for several hours. I say fortunately, because through this circumstance I got in touch with some of the men of Chicago whom it pays for a post-graduate man to meet that he may get the best results from his trip.

Mrs. Bywater and I arrived in the city on Saturday morning—and, after getting settled out near Lincoln Park and ready for work, we found Labor Day on in full force and I with a very painful eye, which had not responded to the treatment that I had administered for myself. I started for the city to find some one who could give me relief, and not knowing any one of the eye men of Chicago, except by reputation, I took the advice of a friend, who directed me to one of Chicago's leading eye men, a splendid fellow to meet, Dr. Wm. E. Boynton, who soon relieved me, and then sat down and helped me to solve the problem of getting in touch with the best work possible for the time that I had to spend in the city. And I must confess that it was a revelation to me to find the busy men of Chicago so unselfish and willing to give me the opportunity of visiting their private offices and getting in touch with their methods in the treatments of the eye, ear, nose and throat. This was the very thing that I had wished for on my way to the city, but had hardly expected that I could have this pleasure.

Dr. Boynton relieved my eye with a few treatments, with the high frequency apparatus, and also showed me every courtesy possible and invited me to visit Dr. Edgar J. George's clinic at Hahnemann Hospital on Thursday, of which opportunity I readily took advantage, and there I had the privilege of meeting Dr. George, of Chicago, and I consider Dr. George one of the best men on the medical and surgical treatment of the eye that it has been my good fortune to meet. And I believe

we are indebted to him more than to any other one man for the correct surgical treatment of strabismus that he has worked out by his untiring efforts along that line. He has perfected this operation to a degree that if we follow his advice there will be few poor results in the treatment of squint. He also seems to have demonstrated that the eye-ball simply wags from the attachment of the optic nerve instead of rotating from an axis within itself.

Owing to the fact that Dr. George is always on time at his clinics and that he rarely, if ever, misses an appointment there, you find his clinics full and overflowing many times with cases that are indeed very interesting. One of the best features about his clinic is that both Dr. George and his worthy assistant, Dr. Boynton, are so cordial and willing to show anything there is to see and demonstrate it so that one can never forget it; therefore, every Thursday found me waiting for the time of this valuable clinic.

I had the pleasure of seeing Dr. George demonstrate his operation for squint on a case of convergence on a myope of very high degree and the result that he obtained was very gratifying indeed. I also had the privilege of seeing him operate to relieve the ocular tension, leaving the iris in the edge of the wound for drainage, which operation he uses a great deal for the relief of that condition. The thing that impressed me very much with Dr. George, as well as all the men that I had the opportunity of seeing, was their conservatism in their work. This was worthy of note, as it is so different from the work of a few years ago.

Through Dr. Boynton I also met that "jolly good fellow," Burton Haseltine, like whom there is none other in Chicago, and when I say jolly good fellow I believe all will agree that I express it rightly. And with that good quality also comes his sterling ability among Chicago's eye, ear, nose and throat men. I believe from my observations that Dr. Haseltine stands among those at the head of the list on ear, nose and throat work. I did not have the opportunity of seeing Dr. Haseltine in any operations on the eye, so I am unable to judge except from his excellent reputation among the men with whom I mingled while there. But I can testify as to his ability on the other work and when you take into consideration that his tonsillectomies run above the 3,500 mark without a fatality, you will understand that he is almost by himself in that class of cases. The unselfish spirit of the

true teacher manifested itself in Dr. Haseltine, and we were given the opportunity of seeing him, both in his private office and private hospital work, besides having the opportunity of visiting his large clinics at Hahnemann Hospital, where his very able assistant, Dr. Alva Sowers, held full sway. Here was clinical material in abundance and the very efficient tonsil work done was of a character that appealed to the most exacting. From Dr. Haseltine's private office I obtained a number of the secrets of his success in the treatment of eye, ear, nose and throat, which I brought home with me for use when needed.

Dr. Haseltine in turn put me in touch with Dr. W. A. Fisher, of the Chicago Eye, Ear, Nose and Throat College, where I spent some time taking notes on Dr. Fisher's India operation for cataract. This interested me greatly and I must say that Dr. Fisher is certainly a clever operator and his technique is excellent. Not only is Dr. Fisher a fine operator, but he is a fine fellow to meet and a splendid entertainer. One can get very creditable work at the college, as there is a large amount of clinical material, all of a private practice nature, and Dr. Fisher has a very able corps of assistants teaching and demonstrating for the benefit of the student. The one thing noticeable here, as elsewhere, was that they were endeavoring to give every man his money's worth with interest.

While dining at the home of our good friend, Mr. P. H. Mallen, of the Homeopathic Pharmacy, I met Dr. Frank Brannen, who introduced me to Drs. A. H. and B. F. Andrews, who are considered among Chicago's best men on accessory sinus work. With the latter I did some special work along the line of accessory sinus and mastoid disease. Dr. Andrews has so thorough a knowledge of the anatomy of these structures and his hand is so well trained to operate that one is really thrilled with his work. The perfect ease with which he operates is really astonishing and one cannot fail to do better work after seeing him operate and being shown his methods. Dr. B. F. Andrews is also connected with the Polyclinic College and I took great pleasure in attending his clinics. He has a six weeks' course which every nose and throat man could well afford to take. It was my good fortune to watch him do a very difficult mastoid and here he demonstrated that same even poise that characterizes all his work.

Occasion presented itself for me to visit the clinics of the Illinois Eye and Ear Infirmary and here I had the opportunity of seeing some

very clever work—that of Dr. Henry Boettcher in tonsil and mastoid work was especially interesting to me. Dr. Boettcher is blessed with a very long forefinger and the way he removes tonsils and then goes down and ties off the tonsilar artery and has every patient leave the table with a dry throat and no danger of post-operative hemorrhage is very impressive. His mastoid operations were done with the burr, and I must confess that they were unique and in the hands of a skilled operator most attractive. However, for my own personal work I think I would prefer the chisel and gouge. I had the opportunity of seeing several other men work at the infirmary, but there was nothing worthy of particular mention as I now recall it. This is a large institution and worthy of considerable time when in the city for post-graduate work.

Dr. Carl B. Wagner, in the Columbus Memorial Building, was another of the good men that I chanced to meet and under whose instruction I got some valuable work on refraction. If you start in with Wagner you are going to know what Wagner wants you to know before he gets through with you. He is very thorough and practical and the little pointers he gives aid very much in every day work.

I am sure that the specialists will pardon me if I digress a little from the straight and narrow way and here mention another phase in the medical curriculum and tell of another interesting man I met and of what he has done for suffering children in his treatment of infantile paralysis. Having a little patient under my care who had suffered from infantile paralysis and was left with the left leg paralyzed, I took occasion to visit Dr. Roy Bernard, one of the masters of the profession, whose heart is thoroughly enwrapped in his work. Dr. Bernard has made a study of this disease for about fifteen years and as a result has worked out a mechanico-surgical treatment for its after effects which has caused a great deal of comment among the medical men of Chicago. Some praise him for his good work and others condemn him because it does not border on serum therapy. But, nevertheless, by his treatment he is getting the results. He told me that he was curing eighty-five per cent, relieving thirteen percent, and that only the other two per cent had failed to respond in any way to the treatment.

I took the time to go and see three of these cases and interview

the parents and found that they had all been practically helpless prior to the treatment and since that time they were in every way normal. Since returning to my home I have given my little patient several treatments and he is improving daily. I mention this in connection with this paper, as I thought perhaps some who might read it might have or know of a child suffering from this disease. The medical profession certainly owes a great deal to Dr. Roy Bernard for his efforts along this line. And Dr. Bernard is anxious to teach the treatment without remuneration to any physician who will go to him for that purpose.

The thing that impressed me most strongly was the good grace with which the Chicago fellows took me in and showed me the things they were doing and tried to help me get what I was after. Everyone was anxious to help in every way he could, all apparently natural born teachers, giving the practical side and not wearying one with a lot of theory and impractical things.

And now in conclusion I want to say that now is the time for the medical profession to get together and make Chicago the greatest medical center in the whole world. Geographically located in the center of the largest field of all the cities in the world from which to draw, within her own limits an abundance of the very best of clinical material, and with what is already there and what more can be attracted by a little effort upon the part of the profession, there is no reason why Chicago cannot attract the medical profession of the whole world for post-graduate work. Not only has Chicago the material for the clinics, but she also has the men capable of giving just as good work as any city in the world. And the best thing about it is that it is not for graft, but for the good that they are able to do for the medical profession. No city in the world has any greater masters in medicine and surgery than has Chicago. So now, while the terrible war is raging across the water and there is no chance for us to go abroad for clinical observation, let us get busy and make Chicago's opportunity good. While in the city I talked with a number of men who had recently spent a few months in Europe and the same verdict came from everyone—never again. They had been disappointed in what they had sought for in Europe and found that they could do better at home than they could there.

The reunion of the College of Homeopathic Medicine of the University of Ohio was held December 12th, 1914, with a noon day luncheon on the campus at Columbus and an evening at the Hotel Virginia. It was one of the most enthusiastic homeopathic meetings ever held in Ohio. The reunion was notable from the fact that President Thompson, of the University, set forth in no uncertain terms the fact that the University welcomes the Homeopathic College. He also made clear the duty of the State in the matter of medical education. An address was make by Judge B. F. McCann, of the Board of Trustees. He assured the profession of the energetic support of the Board. A stirring address was made by Dr. T. A. McCann, of Dayton, setting forth the reasons why homeopathy is entitled to the financial support of the State. Dr. C. E. Sawyer, of Marion, Ohio, acted as toastmaster at the luncheon. The other speakers were Dr. James C. Wood, of Cleveland; Dr. H. H. Baxter, of Cleveland; Dr. Byron E. Miller, of Portland, President of the American Institute of Homeopathy; Dean W. B. Hinsdale, of the University of Michigan; Dean James W. Ward, of the Hahnemann Medical College of the Pacific; Dean Geo. Royal, of the College of Homeopathic Medicine of Iowa, and Acting Dean Claude A. Burrett, of the College of Homeopathic Medicine of Ohio. The evening session at the Hotel Virginia was no less enthusiastic than the afternoon session. President R. O. Keiser, of the State Society, was chairman of the meeting. Addresses were made by Dr. Byron E. Miller, of Portland, Oregon; Dr. Mary E. Mosher, second vice-president of the Institute of Homeopathy of Boston, Mass.; Dr. W. A. Dewey, of the University of Michigan; Dr. J. R. Horner, of the Board of Trustees, Cleveland, Ohio; Dr. Sarah M. Hobson, of Chicago; Dr. W. A. Humphrey, of the College of Homeopathic Medicine of the Ohio State University; Dr. A. E. Hinsdale, of the College of Homeopathic Medicine, Ohio State University, and Dr. H. E. Beebe, of Sidney, Ohio. Alumni and friends of the college from all over the State of Ohio were present and from every quarter came words of enthusiasm and support for the college at Ohio State University.

SPECIAL ANNOUNCEMENT

To the Members of the American Homoeopathic Ophthalmological, Otological and Laryngological Society.

Greetings: It is with pleasure that we announce Chicago as the place of our next meeting. At a recent meeting of the Board of Trustees of the American Institute, Chicago was decided upon as the place for their next meeting, and it has always been the policy of our society to meet with the Institute when feasible to do so, we cheerfully go to Chicago. There is no other city in the country that gives us a better time or a better place of meeting or a better attendance than the "windy city," and I am sure our members will now begin to make their plans to attend.

Please accept this notice as an invitation and send your contributions for the next meeting to the Secretary at once. It is impossible for the Secretary or the President to write personal letters to each member of the society, therefore we would like to have you let us know at a very early date just what we may count upon you for.

With best wishes to all for a Happy and Prosperous New Year,

Dean W. Myers, *President.*

Ira O. Denman, *Secretary.*

NEWS ITEMS

When Dr. A. B. Norton returned from England in September his left hand was causing him trouble on account of too much golf playing during the summer. He thought it was due to his habit of tightly gripping the golf club with that hand. Happily, the hand is now nearly normal and he has a thicker wrapping on the clubs, which he believes will obviate the trouble.

Dr. Charles Helfrich has recovered from a severe illness and is again in his office.

The changes made in the dark rooms at the New York Ophthalmic Hospital are proving most satisfactory.

Dr. Evan S. Connell, who took the course of post-graduate work at the Ophthalmic Hospital College last winter, has opened an office in the Commerce Building, Kansas City, Mo.

Dr. DeWayne Hallet is one of a special committee of the Board of Directors of the New York Ophthalmic Hospital which will try to adjust the expenses to receipts.

Dr. M. B. Meals, assistant surgeon at the New York Ophthalmic Hospital, is in his new office, East End Avenue and 84th Street.

Dr. George W. Mackenzie, of Philadelphia, has accepted an invitation to deliver six lectures before the post-graduate student body of the New York Ophthalmic Hospital.

Dr. J. Burnie Griffin, of St. Augustine, Fla., has been appointed to the State Board of Homeopathic Medical Examiners, succeeding the late Dr. H. R. Stout. He believes Florida is a good field for homeopaths.

Drs. Geo. H. Quay, Carl H. Rust, A. E. Ibershoff and William H. Phillips, of Cleveland, all members of the O. O. and L. Society, were elected to membership in the American College of Surgeons at Washington, D. C., November 16.

Dr. B. McBurney, of Chicago, spent a day in Cleveland, in November, with Dr. Phillips, visiting the clinics of Drs. Wood and Crile.

Dr. Edward F. Gifford, graduate of the Cleveland Homeopathic College, 1893, died at his home in Erie, Pa., in October, from septicaemia due to infection received while operating.

The Cleveland College property has been sold and the proceeds will be turned over to the trustees of Ohio State University for hospital purposes.

The Cincinnati Lyceum of Medicine entertained Dr. C. Burrett, Dean of the New Homeopathic College of the Ohio State University, at the Gibson Hotel December 9th. Professors F. B. Grosvenor and J. A. Ferree accompanied him. Many visiting physicians were present and all were pleased and enjoyed listening to these hustling representatives of the new college.

Dr. I. O. Denman, of Toledo, gave some very fine demonstrations before the Northwestern Homeopathic Medical Society in a new method he has devised in handling patients in the sitting posture while removing tonsils and adenoids, under general anaesthesia.

Dr. Philip Rice, of San Francisco, Cal., announces the removal of his office from the Head Building to the Physicians' Building, corner of Sutter and Powell Streets.

Dr. W. H. Phillips, of Cleveland, is spending a two months' vacation in Central America. If Dr. Phillips likes the Panama Canal he will probably buy it.

Dr. and Mrs. J. M. Fawcett, of Wheeling, W. Va., are spending the winter in Southern California.

The final decision of the Board of Trustees of the American Institute of Homeopathy is that the meeting of 1915 will be held in Chicago and the date will probably be the last of June and first of July. The O. O. and L. Society will also meet in Chicago and if suitable arrangements can be made the date and place of meeting will be the same as that of the institute.

The Western Michigan Homeopathic Medical Society held its annual meeting and banquet at the Association of Commerce in Grand Rapids, on December 16th. Dr. Beeman, of Grand Rapids, presided, and Dr. Haseltine, of Chicago, delivered the address of the evening.

Dr. J. T. Schlusselman has returned to his practice in Good Thunder, Minn., after a few months spent in eye and ear work in Chicago and New York.

Dr. Samuel M. Moore, who formerly practiced in Evanston, Ill., has resumed practice in that city after an absence of several years.

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Editor: DR. G. W. MACKENZIE

CONTENTS FOR FEBRUARY, 1915

EDITORIALS

Page

Stricter Requirements for Membership in the O. O. and L. Society. 95

An Honest Confession is Good for the Soul. 96

Transparent Preparations. 98

Announcement. 98

ORIGINAL CONTRIBUTIONS

Syphilitic Lesions of the Ear. By J. V. F. Clay., M. D. 99

The Elliot Operation. By J. Ivimey Dowling, M. D. 110

Toxic Uveitis Following Vaccination. By A. E. Ibershoff, M. D. 121

Some Ear Cases. By E. H. Linnell, M. D. 125

A Practical Method of Correcting Septal Deformities. By Irving Townsend. M. D. 133

Cataract Extraction with Preliminary Iridectomy, Irrigation and Discission. Results of Forty-Two Cases. By Francis B. Kellogg, M. D. 136

Tonsillotomy vs. Tonsillectomy. By Richard H. Street, M. D. 140

A Recent Series of Mastoid Cases. By Gilbert J. Palen, M. D. 144

The Treatment of Acute Mastoid Abscess from the Etiologic Standpoint. By George W. Mackenzie, M. D. 154

HOMOEOPATHIC MATERIA MEDICA AND THERAPEUTICS. 159

CURRENT LITERATURE. 162

SOCIETIES. 170

INSTITUTIONS—New York Ophthalmic Hospital. 172

ABSTRACTS. 173

BOOK REVIEWS. 184

NEWS ITEMS. 186

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The Journal of Ophthalmology Otology and Laryngology

Vol. XXI FEBRUARY, 1915 No. 2

EDITORIAL

STRICTER REQUIREMENTS FOR MEMBERSHIP IN THE O. O. AND L. SOCIETY

Lest it should be overlooked in the published proceedings of the twenty-seventh annual meeting of the Homoeopathic Ophthalmological, Otological and Laryngological Society by those of us who are prone to look at the proceedings in a casual manner only, the editor desires to call attention to the amendment to Article V of the by-laws, which reads as follows:

Article V, Section 1. Any reputable physician may be elected to membership in this society who shall have fulfilled one of the following requirements or other qualifications judged by the Board of Censors to be an equivalent:

(a) Not less than one year of service subsequent to graduation as an interne in a reputable hospital or infirmary devoted to treatment of diseases of the eye, ear, nose or throat

(b) Not less than six months of post-graduate study in these specialties in a reputable teaching institution.

(c) Not less than one year of association in private practice with a reputable practitioner of these specialties. The candidate shall have the endorsement of two reputable physicians from the locality in which he resides.

(d) Not less than three years of independent practice in one or more of these specialties, and the submission of a report of fifty consecutive medical or surgical cases, which shall include histories, treatment and final results. These reports are to be subject to the approval of the Board of Censors.

(e) Evidence of original investigation of a worthy character upon a subject related to these specialties. This material is to be presented in a form suitable for publication by the society in its transactions.

(f) In addition to one of the above, each candidate shall be required to submit a paper on some subject relating to his specialty to the Board of Censors and, if accepted by the board, shall be read before the society by the candidate at the next meeting.

The JOURNAL endorses this recent move of the O. O. and L. Society as one in the right direction. It shows the progressive spirit of the society and its desire to keep abreast of the times. The requirements are equal to those of any other society, not excluding the American College of Surgeons. In the future to be a member of the O. O. and L. Society will be even a greater honor than heretofore. The JOURNAL accordingly extends to the Society best wishes for its continued success.

AN HONEST CONFESSION IS GOOD FOR THE SOUL

In an address delivered at the opening of the session of 1914-1915 of the Columbia University College of Physicians and Surgeons, which appeared in the December 12, 1914, number of the *Journal of the American Medical Association,* Frederick S. Lee, Ph.D., attempted to impress upon the students the importance of "medical science" in contrast to "clinical medicine." In reference to the present medical curriculum he says, "One of the most striking incidents of its recent history is the prominence that has been acquired by the medical sciences." To this we concur. Further on, when contrasting medical science with clinical medicine, he says: "If the history of medicine is to be summarized, it may be conceived as a constant conflict between empiricism and speculation on the one hand and science or something that corresponds to science on the other. Each side has had its victories and its defeats; each has had its periods of ascendency and its periods of decline; neither side has been wholly wrong; medicine at all times has been a mixture of the two." To this we concur. Still further on he says: "One of the dangers to which students are exposed is that of learning the methods of their instructors without the reasons therefor and blindly carrying over the same methods into their own practice. This procedure, which may be called learning by inheritance, while implying a gratifying degree of respect on the part of the student

for his professor, is not to be recommended, for while it may make a ready man, it does not make a full one."

A little further on he points out another glaring fact, as follows: "What dispensary physician has not prescribed, without further thought of their constituents or physiologic action, 'Loomis' tonic,' 'tonic No. 6,' 'whooping cough mixture No. 4,' 'epilepsy mixture,' 'Lockwood's sedative,' 'Pill Janeway,' or their equivalents? Such a practice becomes too often mere mechanical routine, detrimental to the future growth of the scientific physician," all of which is too true in most schools of medicine, but *fortunately not in all.* In submitting "glaring deficiencies" in medicine the author submits some figures quoted from Richard C. Cabot, "Diagnostic Pitfalls Identified During a Study of Three Thousand Autopsies" at the Massachusetts General Hospital, which the JOURNAL presents in full.

PERCENTAGE OF MISTAKEN DIAGNOSES FOUND BY CABOT.

Acute nephritis	84	Phthisis, active	41
Acute pericarditis	80	Aortic stenosis	39
Hepatic abscess	80	Septic meningitis	36
Chronic myocarditis	78	Brain hemorrhage	33
Vertebral tuberculosis	77	Mitral stenosis	31
Broncho pneumonia	67	Gastric cancer	28
Renal tuberculosis	66.7	Tuberculous meningitis	28
Suppurative nephritis	65	Cerebral tumor	27.2
Peptic ulcer	64	Chronic glomerulonephritis	26
Acute endocarditis	61	Lobal pneumonia	26
Hepatic cirrhosis	61	Cancer of colon	26
Thoracic aneurysm	50	Aortic regurgitation	16
Chronic interstitial nephritis	50	Typhoid fever	8
Miliary tuberculosis	48	Diabetes mellitus	5

"The average of mistaken diagnoses in these twenty-eight diseases is 46.5 per cent, or nearly one-half, and this is one of the leading hospitals in the country, where all available aids to correct diagnosis ought to be had. Dr. Cabot says: 'The study of the details in these cases before and after death convinces me that, for the present and under the present limitations of diagnostic method, few of the mistakes tabulated above could have been avoided.'"

Quoting further from Dr. Lee's address, referring to the manner in which the physician should handle a case, he says, "When confronted by a case of disease he will attack it, not as he may have attacked a hundred other cases of the disease before, for no two cases are wholly alike—nature never copies her works exactly."

We have no doubt that Dr. Lee has presented the whole truth and nothing but the truth as far as he is able to see it. Granting this fact, could there be any stronger plea for the scientific investigation of the principle of homoeopathy? If we are to practice the scientific medicine that he advocates and upon definite scientific diagnosis, what is going to happen to the 46 per cent. of the cases misdiagnosed in the Massachusetts General Hospital? The answer is simply mistreatment. If the 46 per cent. had been treated symptomatically after the law of similars is it possible that none might have been saved? In a nutshell, so long as there is chance of misdiagnosis and the application of remedies of unknown action just so long will there be real need of homoeopathy.

TRANSPARENT PREPARATIONS

Through the courtesy of Professor B. F. Kingsbury, of Cornell University, there appeared under this heading in the October number of the Journal, page 277, formulas for the preparation of transparent specimens. We have recently been advised by the former editor, Dr. John L. Moffat, that the method was originated by Professor Spalteholz.

We thank Dr. Moffat for calling our attention to it.—Ed.

It is a pleasure to announce that Dr. Ira O. Denman will act as associate editor for the March number of the Journal. Dr. Denman is well known to the profession for his ability as an eye and ear surgeon; he also occupies the important position of Secretary of the O. O. and L. Society, and if we are to estimate his editorial success proportionately with that in these other two fields we may expect an excellent number in March. Already Dr. Denman has corralled a series of instructive articles by experienced writers.

SYPHILITIC LESIONS OF THE EAR*

Joseph V. F. Clay, M. D.,

Philadelphia, Pa.

THE past decade has wrought magnificent achievements in the advance of our knowledge of syphilis. For these advances we are indebted to the indefatigable laboratory workers. Since the discovery of the spirochaeta pallida by Schaudinn and Hoffman[1] in 1905, it is possible to make a positive diagnosis of the disease from the primary lesion. The serum reaction of Wassermann[2] has given us an invaluable aid in the diagnosis. For a short time the tried and recognized treatment was threatened with annihilation by the introduction of salvarsan by Ehrlich[3] in 1910. The obscure forms of syphilis can now be revealed by the luetin test of Noguchi[4]. This noted laboratory expert[5] has also demonstrated the spirochaeta pallida in the brain of paretic patients and the spinal cords of tabetic patients. The value of these searchlight methods cannot be overestimated.

Syphilis may manifest itself in any portion of the ear. Primary syphilis of the external ear is seldom observed. Kipp[6], in his excellent collection of cases from the literature, reports a number of interesting infections. In one case a chancre occurred on the lobule, the result of using a towel which had been used by a syphilitic in cleansing his infected organ; another case of chancre in the same location occurred as the result of a kiss by an infected individual. A syphilitic nurse infected a child by kissing it on the mastoid process. A phagedenic hard chancre of the lobule resulted from the bite of an infected individual. Dr. R. F. Hill reported, at the Clinico-Pathological Society, in October, 1911, the case of a chancre of the lobule of a young male. This infection was the result of a bite which occurred during a fight. There was a wound of the lobule which healed, and twenty-two days later a chancre appeared, associated with marked peri-auricular adenopathy and considerable oedema over the mastoid. A Wasserman was taken and report returned from the laboratory was positive XXX.

*Read before the Society of O. O. and L., Atlantic City, June 30, 1914.

Gumma of the auricle has been observed by a number of investigators. These occurred in the tertiary period of the disease, and in the majority of instances the lesion was located on the anterior aspect of the auricle. One observer saw it on the posterior aspect. The tumefaction in these lesions breaks down, assuming almost any shape, and increases in size and depth. The resulting ulcer is ragged and covered with grayish discharge, which is difficult to remove. Usually, under adequate treatment, the ulcer heals with little deformity. The occurrence of chancre of the pinna may be mistaken for malignancy, and the presence of gummata may arouse suspicion of malignant growths. However, malignancy will usually present a process of growth preceding the ulceration. Syphilis is usually preceded by an inflammatory condition, and the ulceration has an indurated edge with firm base. In doubtful cases, the Wasserman test will aid in the diagnosis.

Secondary manifestations of the external auditory canal occur as macular, papular and pustular lesions, associated with general skin manifestations. We also find condylomata, ulceration and chronic diffuse inflammation. These lesions give rise to the usual symptoms of inflammatory invasion or mechanical obstruction of this channel. If pain is present, it is aggravated by motions of the jaw, or traction of the auricle. If these lesions narrow or occlude the lumen of the canal, dull hearing and subjective noises will be present. If discharge is present, it is usually of a peculiar fetid odor foreign to aural discharge from non-syphilitic lesions. Condylomata are found frequently in association with middle ear suppuration. The surface of the condylomata is at first smooth and somewhat convex. Later this ulcerates and secretes a sero-purulent fluid, which is markedly excoriating and causes secondary inflammation and ulceration where it comes in contact with the surrounding integument. As soon as ulceration occurs, pain is added to the symptoms. Recently, we saw a male patient, forty-one years of age, who came to us because of dull hearing in the right ear. Upon examination we found a condylomata occluding the external meatus. There was no discharge and no ulceration, and by using a small aural speculum we were able to demonstrate an intact drum. He gave a history of having had a chancre five years ago, and had been under treatment for syphilis for two years. A Wasserman

test was made by Dr. S. W. Sappington, who reported it to be positive XXX. Under mercurial treatment the growth is rapidly disappearing, and this without local treatment.

Ulcerative lesions have been studied by Schwartze[7], who describes them as usually annular and covered with dirty grayish-white exudate. The swollen edges of the ulcer cause a marked narrowing of the lumen of the canal. They are usually situated in the outer part of the canal. He found these lesions in ears with normal drums as well as in cases with associated suppurative middle ear disease. The glands in the vicinity of the ear are usually swollen. We encountered a case of syphilitic ulceration of the external auditory canal in a young male aged thirty-two years. We were consulted in this case with the idea of operating for acute mastoiditis on account of the associated inflammatory symptoms. The patient had been ill for several days with pain in the left ear, worse upon motions of the jaw or traction of the auricle, dull hearing and tinnitus aurium, and thin sanious discharge. He was unable to open his mouth on account of stiffness, and pain occasioned by the act. There was marked swelling over the mastoid process, causing prominence of the auricle and downward displacement of same. The parotid gland was enlarged, as was also the post cervical lymphatic chain. The external auditory canal showed swollen walls with marked ulceration on the floor and anterior wall. It was impossible at this time to see the drum. We readily elicited a history of chancre five years before, followed by the usual throat and skin manifestations. After a short course of treatment he was pronounced cured by his doctor. Under active mercurial medication the ulceration in the canal healed, but before healing was complete we were able to demonstrate an intact drum. This patient drifted into other hands, to return to us in a year with a gumma of the septum. Another interesting case of secondary syphilitic lesion of the external auditory canal came to Professor Palen's Clinic at Hahnemann two years ago. This woman had had a recurring pustular condition of the external auditory canals for several months. She had been treated at one of the very excellent hospitals of this city, by a man of repute, but experienced no relief. She was anaemic, suffered insomnia and had severe headaches. We questioned her closely and readily elicited a history of chancre a few years before. She had had the secondary rash and

throat symptoms, and she acknowledged having been under treatment in one of our hospitals for syphilis. Mercurial treatment in this case brought about prompt cessation of the aural condition, and this without local medication; her general health improved and her headaches disappeared.

Syphilitic conditions of the middle ear tract do not, unfortunately, present distinctive or pathognomonic manifestations by which they might be recognized. For this reason, too often, these lesions progress to hopeless and sometimes total destruction of all functional possibilities through either a proliferative adhesive inflammation or a suppurative destructive process. During the throat and mouth manifestations, the Eustachian tube takes part in the general inflammatory condition, with the production of marked tubal symptoms. Fortunately, this condition receives its proper medication through the diagnosis of the pharyngeal or mouth lesions. It is reasonable to suppose that ulceration may take place within the lumen of the tube, and that during contraction attending healing strictures occur.

Congenital lues is frequently a cause of rapidly progressive tympanic disease in the young. It is found associated with interstitial keratitis, but, unlike the ocular lesion, its tendency is to become progressively worse, with ultimate extension to the labyrinth. We had recently under our observation a lad of seven years with undoubted hereditary lues. He presented an interstitial keratitis and an arthropathy. He was referred to us because of dull hearing. Examination revealed drum membranes atrophied and bound down to the inner wall of the middle ear. The hearing tests at first examination pointed to confinement of the lesion to the conducting apparatus. He was receiving adequate treatment at other hands, but, in spite of this, in a few months further examination of his ears showed distinct evidence of extension of the destructive process to the cochlea. His keratitis, however, had improved.

Suppurative lesions of the ear of syphilitic origin are also without characteristics to guide us in the diagnosis. The process is rapidly destructive and tends to early involvement of the bone. The drum and ossicles break down rapidly and there may be early extension to the internal ear, or involvement of the brain, lateral sinus, or facial nerve. Bruck[8] speaks of a "melting" of the tissues that is foreign

to suppuration non-syphilitic in origin. He likens it to the process observed in gumma of the palate. Hessler[9], in his report of nineteen cases of fatal hemorrhage from erosion of the internal carotid artery, found that two of his cases occurred in patients suffering from tertiary lues. Kipp[10] observed a metastatic irido-choroiditis of the eye on the same side as the purulent middle ear disease in a luetic patient. In this case, the ear disease cleared up, and hearing was restored under general treatment.

We observed one case of suppurative otitis media occurring in a syphilitic patient, which from the clinical history and course seemed to be of luetic origin. The patient, a female aged twenty-eight years, had had the initial lesion one year before her visit to us. During the throat symptoms she developed pain in both ears, followed by discharge and marked dullness of hearing. She had been under the care of her family physician, who referred her to us because of the rapid progress of the middle ear disease. Upon examination, we found the patient to be quite dull of hearing, appreciating conversational voice on contact in both ears. The fork tests showed shortened bone conduction in both ears and a falling out of perception of C, C1 and the high C4 forks. Labyrinth tests were normal. There was total destruction of the right membrana tympani and the malleus was gone. The left ear showed a very large perforation in the membrana tensa, the manubrium was absent, but the short process was still present. Under active mercurial treatment and simple cleansing of the ears the suppuration ceased. Her physician being anxious to cure her syphilis quickly gave her an injection of salvarsan, and, very promptly, the suppuration in both ears became active. We again placed the patient on mercury, with early cessation of the discharge. We had occasion to examine this woman a year later and found the ears dry, but the dull hearing of course the same. She was still taking mercury.

Syphilitic invasion of the internal ear and auditory nerve usually occurs in the latter part of the second stage, or later. Politzer states that it may occur simultaneously with the secondary skin lesions, and in one case observed by him it appeared seven days after the primary lesion. Kipp observed a case which occurred in connection with a case of naso-cranial osteitis twenty-six years after the primary disease, after a lapse of more than twenty-five years of complete freedom

from constitutional syphilis. It may occur alone or in connection with tympanic disease. Politzer states that it may occur without the presence of any other symptom of the general affection discoverable at the time. It constitutes one of the most frequent forms of primary disease of the aural perceptive apparatus and occurs in hereditary or acquired lues.

There are three clinical types of acquired syphilis of the internal ear: (1) That which appears in the late secondary or in the tertiary periods. Its onset is quite sudden, marked by deafness in both ears and disturbances of equilibrium, nystagmus, vertigo, nausea and vomiting. This type may also be unilateral. (2) Another type may be called the chronic syphilitic labyrinthitis. It is observed in adults who have had chronic constitutional syphilis over a period of years. The patient has occasional attacks of vertigo; the hearing is dull, and upon functional examination bone-conduction is short; Rinné test is negative, and there is a falling off for high tones. This type of labyrinthitis must be differentiated from oto-sclerosis involving the membranous cochlea. (3) The third type of labyrinthine involvement of acquired lues is that secondary to chronic suppurative middle ear disease.

The symptomatology of labyrinthine syphilis will vary with the type. In the acute type, and where both branches of the nerve are affected, the onset is sudden, with rapidly developing deafness, pronounced tinnitus aurium, disturbances of equilibrium, rotational vertigo, nausea and vomiting. Nystagmus will be present, its intensity and direction depending upon the extent to which the vestibular branch is affected and the duration of the lesion. Fork tests will show shortened or absent bone-conduction, and, if there is hearing present, it will be for low forks. The result of testing the irritability of the static labyrinth will likewise depend upon the extent to which the nerve is involved. In chronic labyrinthitis, the development is more gradual but progressive. Deafness develops more slowly but surely; tinnitus is usually present; disturbances of equilibrium are paroxysmal; but in the intervals between the attacks involvement of the vestibular branch may be elicited by the rotational or galvanic tests.

The following brief report of two cases of syphilitic neuritis of the auditory and facial nerves will be of interest. Case 1 is that of a male

thirty-two years of age, who had his initial lesion in November, 1912. Two months later he developed typical secondary manifestations. His physician administered salvarsan by intramuscular injection. Three months later he developed a humming tinnitus in both ears, more pronounced on the right side. He was slightly dizzy and nauseated. Five days later he noticed his right eye weeping; he could not close his right eyelids and he had difficulty in keeping food in his mouth. At this time he reported to us. Upon examination we found a complete facial paralysis, bone and aerial conduction on the right side negative. The right membrana tympani was slightly dull, otherwise normal. In the left ear bone-conduction was negative, but he claimed he could hear the high C 4 fork by aerial conduction. The left ear drum was dull and slightly retracted. Wasserman test was found to be mildly positive. One week later deafness was complete. Vertigo was now very marked, and patient was unable to sit or stand; and when attempting these postures would fall in a heap to the floor. He did not deviate to one side or the other. At this time the left side of the face became paralyzed, and there was present a rotary nystagmus to the left. Energetic mixed treatment (injections of mercury and K. I. internally), which had been instituted from the beginning, was continued. Nine days after he had been under this treatment the facial paralysis showed improvement and the patient was able to partially close his eyelids. His dizziness improved so that he was able to sit up in bed. One week later the facial movements were normal, the paralysis having cleared up, and he could hear a loud conversational voice in the left ear at three feet. Bone conduction was still markedly shortened. Two months later the facial movements were normal, the hearing in the right ear had improved to the perception of a conversational voice, while in the left ear he heard a whisper at three feet. The bone conduction on the right side still remained short, while on the left side it gradually improved, but did not come up to normal. The static labyrinth reacted to the caloric test, and the after-turning nystagmus to right side was twenty-seven seconds and to the left side twenty-five seconds.

The second case was that of a male aged nineteen years, who in June, 1911, five weeks after exposure, developed a genital chancre.

Two months later he had an injection of salvarsan. Three weeks after this he suddenly developed marked dull hearing and dizziness, with sensation of fullness in the head. Objects seemed to rotate in circles before him. Three weeks after the onset of the dizziness the right side of the face became paralyzed. Upon examination we found right complete facial paralysis and marked falling off in hearing on both sides. We had to shout at patient, and bone and aerial conduction very short in both ears for all forks. Caloric test on right side elicited a very feeble reaction, and after-turning nystagmus to left twenty seconds, and to the right 12. Under mixed treatment the facial paralysis improved rapidly and the disturbances of equilibrium disappeared, but the hearing remained dull. The patient did not return for further treatment.

The prognosis of luetic infection of the internal ear depends upon the type present. Congenital syphilitic labyrinthitis offers a hopeless prognosis so far as hearing is concerned. The acute acquired type offers a good prognosis if the condition is early recognized and active anti-syphilitic medication administered. The chronic constitutional labyrinthitis offers a less favorable prognosis than the acute variety.

The treatment of syphilis of the ear is that of syphilis in general, and, since the introduction of salvarsan, this has aroused renewed attention, particularly in view of the number of reported cases of early nerve lesions. It is pretty generally understood that salvarsan alone does not cure syphilis; that we have to fall back on the old remedies—mercury, potassium, idodid and others. Ashcraft, who was the first man in Philadelphia to employ salvarsan, and who has based his treatment of syphilis upon the modern methods and a large experience with this newer remedy, says:

"As soon as the diagnosis is made, the exception being in favor of marked lesions of the nervous system, such as locomotor ataxia, or possibly changes in the optic or auditory nerves, an injection of salvarsan should be given. This should be followed by a similar injection of neo-salvarsan from within three days to a week, depending upon the character of the plus Wasserman reaction. If XXXX positive, it should be given in three days; if XXX positive, in five days; if XX positive, in six days. A period of rest of one week should be given. The patient then starts taking mercury, preferably the red iodid, first

decimal, one tablet three times a day, increasing the dose until the physiological symptoms present. This is the patient's full dose. This is cut in half, and the patient takes the half dose covering a period of six months, unless some cutaneous manifestations or other marked clinical symptoms should appear; in which event another dose of neo-salvarsan should be given, and a course of mercury to follow a week after the injection.

"From a sereological standpoint it is known that mercury negatives a Wasserman, and if we wish to study this it is necessary that all medication be stopped for a period of two or three weeks. In event of a positive reaction another injection of neo-salvarsan should be given, followed by a course of mercury.

"It is my experience that neo-salvarsan has its best sphere of action in the early stages of syphilis, in the chancre or early secondary lesions of the mucous membranes and skin. In the later manifestations of syphilis, that is, in lesions of the nervous system, the efficacy of neo-salvarsan is in doubt. Within the past few months Fordyce, of New York, and other investigators have been withdrawing the spinal fluid in these cases and examining for the spirochaetas, and if found present an injection of salvarsan is made in the spinal canal. The technique of this procedure has not been perfected and I have not used it.

"Local lesions of the skin and mucous membrane must be treated by topical application. Lesions of the special senses require special attention according to the special indications. Here potassium iodid has found a sphere of usefulness.

"While salvarsan is far from being specific, at the same time it must be given for its beneficial effects and always there must be the mercurial treatment following.

"As to the harmful effects of neo-salvarsan, occasionally cases are reported where serious results have followed its use. This must be due to lack of care in giving the drug.

"Before pronouncing a cure of syphilis a negative Wasserman should be obtained from the spinal fluid."

As regards the local treatment of lesions of the ear, a pustular otitis externa will not yield to any form of local application if we fail to attack the systemic infection. On the other hand, these local conditions bring about secondary local lesions which must be corrected

by proper local attention. Cleanliness and dryness is of great importance in the lesions of the external canal; in the middle ear suppuration, careful toilet of the canal, removing all discharge from this and the middle ear. If necrosis has occurred, we can not hope for a cure except through radical operative interference combined with active constitutional treatment. The adhesive middle ear conditions usually prove very resistant. The process is so rapid that marked changes have occurred before treatment has been established. In congenital cases treatment is disappointing. In acquired cases of non-suppurative middle ear lues, early anti-specific treatment and proper local measures—as keeping the Eustachian tube patulous and attention to the pharynx—bring about happy results.

The treatment of syphilis of the internal ear and auditory nerve is active anti-syphilitic medication. It is pretty generally accepted that salvarsan is the most active anti-syphilitic remedy we have today. It strikes a big blow at once, but the reports of cases of auditory nerve involvement early in the disease, and especially in cases which have received salvarsan, have led to considerable discussion as to the efficacy or dangers of the drug in the presence of cranial nerve lesions. Alexander[12], of Vienna, believes that salvarsan is indicated only in chronic syphilitic involvement of the auditory nerve and chronic labyrinthitis complicating chronic constitutional syphilis. He advises against its employment in the acute labyrinth or auditory nerve manifestations. Duel, of New York, in his review of the literature, indicates that the opinion is that the cases of auditory nerve lesions following the use of salvarsan were not due to the drug, but to the poison of the infection. Fordyce believes that salvarsan neither cures nor accelerates optic nerve atrophy, but that it exerts a beneficial influence upon the optic neuritis of the early periods of syphilis. He further states that if this observation is correct, there is no apparent reason why the same may not be true of the lesions of the auditory nerve.

It would seem that the indications are not quite clear as to the use of salvarsan in syphilis of the labyrinth and auditory nerve, but the opinions advanced, and observations made, seem to favor the theory of syphilitic poisoning of the nerve rather than toxic action of the drug.

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2102 Chestnut Street.

Gelsemium in hysterical amblyopia. D. E. S. Coleman reports two cases in the August *Chironian*:

I. Male, 39. History of long-continued nervous strain. Could not see print with right eye, and distant objects seemed to be covered with a dense fog. Left eye was affected, but could read with difficulty. A well-known homoeopathic oculist diagnosed hysterical amblyopia. A small fraction of a drop of gelsemium 4 t. d. was prescribed upon: Great lassitude, difficulty in holding urine, drowsiness, could hardly keep eyes open, occasional tremor, desire for absolute quiet on account of nervous exhaustion, occipital headache and fogged vision. Immediate improvement and complete cure in about two months.

II. Miss A., 36. In September, 1911, following nervous strain and smallpox, her sight began to fail, until she could not read and distant objects became scarcely discernible. Diagnosis, hysterical amblyopia. Gelsemium was given as above because of the great exhaustion and the eye symptoms. Complete cure in a few months.

THE ELLIOT OPERATION

J. Ivimey Dowling, M. D.,

Albany, N. Y.

A FULL discussion of sclero-corneal trephining in the operative treatment of glaucoma would necessitate a repetition of much that has already been published by Elliot and others who have followed his teachings. Therefore the writer will restrict this paper to a discussion of sclero-corneal trephining as devised by Elliot, and will not refer to the many modifications that other operators have devised, and which to them seem superior to the method advocated by the originator.

Every paper should have a reason for its publication, and I offer as my excuse for the present article the several urgent requests made by some who have observed a few of the after-results in cases of glaucoma operated according to Elliot's method.

My experience is limited to fifteen operations performed upon eleven patients varying in age from 17 to 75.

The typical Elliot operation is performed after the following manner:

A large conjunctival flap is made, encircling the upper portion of the cornea, and carried down on either side to about the extent that the cornea is to be split. The base line of the flap should measure from 20 to 25 mm. from a point 5 to 8 mm. at either side of the cornea, and the upper edge of the flap should be at least 8 mm. above the upper edge of the cornea. The initial incision may be started at either side of the cornea, and made to encircle the upper corneal margin at the proper distance, or an initial nick may be made above the center of the corneal margin at proper distance, and the incision completed by secondary incisions to points 5 to 8 mm. at either side of the cornea.

This flap is then dissected *down to the corneal limbus over the central area only*, leaving at either side an attached area, which later serves to retain the flap in position. *Originally the dissection of the conjunctival flap is somewhat superficial, but upon nearing the corneal limbus a deeper dissection is instituted to the point of exposing the*

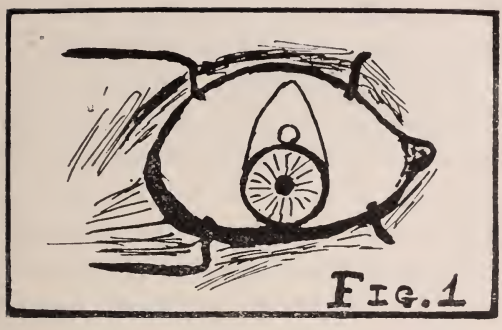
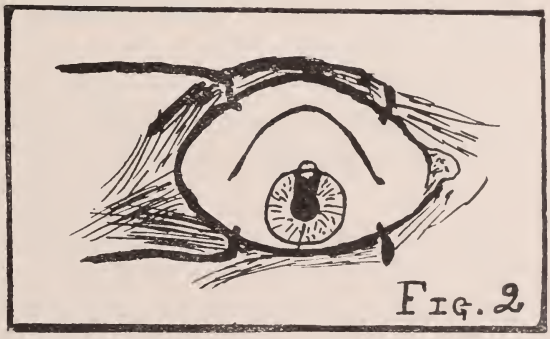


Fig. 1.
Early Technique.

Shows pyramidal flap. The trephine hole which was originally entirely in the sclera. No iridectomy. In the early operations iridectomy was a matter of choice.

Fig. 2.
Most recent technique

Indicates large flap, sclerocorneal trephine hole and iridectomy, which in present technique should be performed whenever possible.



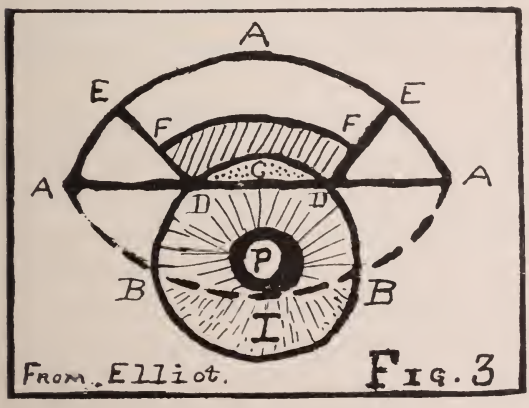


Fig. 3.

Diagrammatic representation of the area laid bare by the conjunctivo-corneal flap.

aaa —Line of conjunctival incision.
abba—Flap thrown down on the cornea.
c —Dark arc-like area of split cornea.
dd —Straight line of reflection of the flap.
edde—Area dissected up in order to enable the cornea to be exposed.
effe —Area of the upper part of the wound from which the conjunctiva alone is dissected up, when commencing to make the flap.
fddf —Area immediately above the limbus cleared right down to the sclera, in the course of dissection of the flap.
ade —The area on e ach side in which the subconjunctival tissue is spared as much as possible in order to preserve the check-ligament-like action, which helps the flap to lie in good position after the operation is finished.
i —Iris.
p —Pupil.

sclera. In this way the corneal margin may be readily recognized as a rounded ridge slightly overhanging the sclera. The next step is the splitting of the cornea, and Elliot specifically advises a tearing rather than a cutting method to be pursued, his own words being, "tear rather than cut." Elliot recommends that the closed scissor points of such an instrument as Stephens be used for the corneal splitting, although any rather blunt dissector may be employed. The conjunctival flap is reflected over the cornea, and the instrument applied at an acute angle, then gradually worked beneath the superficial corneal layers, until a corneal flap from 1 to 2 mm. is attained, the average of safety being 1 mm.

It now becomes necessary to apply the trephine; the simplest one perhaps is that of Stephenson, which is slid into position, which when correct permits the instrument to invade the cornea and sclera so that the disk which is removed consists in part of sclera and in part of corneal tissue, thus opening up the canal of Schlemn, and establishing a direct communication with the aqueous chamber. In applying the trephine the upper end of the instrument should be slightly sloped toward the patient's feet. Elliot favors 2 mm. for the diameter of the cutting disk of the trephine, although he has employed both larger and smaller sizes.

In applying the trephine it is necessary to apply quite a degree of force, until a circular groove is created, after which a light steady cutting stroke should be used. That the trephine has cut through the tissue is shown by a slight sucking sensation and also a change in the shape of the pupil, which becomes oval because of the out-rush of aqueous, and with it a trifling upward movement of the iris. In case the disk is not fully severed by the trephine it may be completely excised with the aid of scissors.

Upon removal of the disk the iris frequently bulges through the opening. This is then seized and a full or partial iridectomy performed. In the event of the iris failing to protrude it is permissible to neglect the iridectomy.

The iridectomy having been performed, the wound is irrigated with a normal saline solution by "placing the nozzle at the entrance of the trephine hole" and directing the stream into the anterior chamber. This will serve to replace the cut iris without undue danger.

The flap is now replaced and may be sutured, but Elliot prefers to avoid the use of sutures.

In performing this operation the site of election is under the upper lid, but it may be placed at any other point if occasion warrants. It is well to remember that when some other point is chosen then sutures are essential.

At the time of operation Elliot prefers to avoid the use of any myotic, but in the event of no iridectomy, or only a partial one having been performed, if the pupil shows a tendency to prolapse toward the site of the wound eserin may then be instilled, and he advises a solution of eserin, 4 grains to an ounce of water. The third day after the operation a one per cent atropin solution should be instilled.

Personally I have found it advisable to instil atropin on the following day, because the quiet iritis that so frequently follows may become a very annoying complication.

Both eyes should be closed and bandaged after the operation. After the first twenty-four hours the unoperated eye may be uncovered.

Some of the beneficial effects that follow the Elliot operation may be readily determined by a study of the following cases I have operated:

Case 1. Miss G., age 70. Tension before operation O. D. 40. O. S. 35. Tension after operation O. D. 14. O. S. 10. A small buttonhole iridectomy was performed on the right eye, and a large buttonhole iridectomy on the left eye. The vision before operation was O. D. 20/40 and O. S. 20/40. Vision after operation was O. D. 20/30 plus O. S. 20/30.

Case 2. Fred M., age 17. Tension before operation O. D. 45 and O. S. 48. Tension after operation O. D. 23 and O. S. 25. No iridectomy was performed on either eye. The vision before operation was O. D. 20/40 and O. S. 20/40. The vision after the operation was O. D. 20/40 plus and O. S. 20/40 plus.

Case 3. Mrs. B., age 75. Tension before operation O. S. 45. Tension after operation O. S. 23. Full iridectomy was performed. Vision before operation was 10/200 and after operation was 20/40. At the time of the operation there was considerable hemorrhage into the anterior chamber. Horse serum 10 c. c. injected. Patient's blood pressure, 220.

Case 4. Welch, age 60. Tension before operation O. D. 120 After operation O. D. 18. No iridectomy was performed. The eye was blind before operation, and is still blind.

Case 5. Mrs. S. Tension before operation O. S. plus 3. After operation O. S. plus 3. Full iridectomy was performed. Patient was blind before operation and obtained no relief after operation. This was a case of acute glaucoma. The blood pressure was very high. The eye was finally enucleated.

Case 6. Mrs. E., age 72. Tension before operation O. S. 82. Tension after operation O. S. 25. No iridectomy was performed. Vision before operation was O. S. 20/200 and after operation O. S. 20/50. The operation was performed at the side because of previous scar resulting from cataract extraction with iridectomy. The patient had a very high blood pressure.

Case 7. Mrs. B., age 55. Tension before operation O. D. plus 3, O. S. plus 3. Tension after operation was normal both eyes. No iridectomy was performed on either eye. The patient had merely light sense before operation, and afterward was able to distinguish objects. At the time of the operation there was a hemorrhage into the anterior chamber, and horse serum 10 c. c. was injected.

Case 8. Mrs. H., age 46. Tension before operation O. S. plus 3. Tension after operation normal, later 30. No iridectomy was performed. Vision before operation, light sense, and after operation the same. A subsequent cataract extraction increased the depth of the anterior chamber, and still further reduced the tension, which at last examination was 18 mm. Hg.

Case 9. Capt. P., age 55. Tension before operation O. D. 40. After Elliot operation 22 mm. Hg. This eye had been previously operbefore operation was 20/50 and after operation was 20/40.

Case 10. Mrs. W., age 53. Tension before operation O. D. 35, O. S. 40. Tension after operation O. D. 20, O. S. 18. Full iridectomy was performed on both eyes. Vision before operation O. D. 20/200, O. S. 20/100. Vision after operation O. D. 20/70, O. S. 20/70.

Case 11. Mrs. Y., age 42. Tension before operation O. S. plus 3. After Elliot operation 22 mm. hg. This eye had been previously operated for glaucoma by the Graefe method. Later cataract ensued, and was removed through a linear corneal incision. The result was sat-

isfactory for a period of eighteen months. Then acute glaucoma ensued, the tension rising to plus 3, at which time an Elliot operation was performed at the temporal side of the eye. A good entrance was secured to the aqueous chamber, but no additional iridectomy was performed. This resulted in reduction of tension and improvement of vision, which at last test, with the aid of glasses, equaled 20/200, being an increase from mere objects before the operation. Otherwise this operation relieved all the pain, and has proven very satisfactory. The cicatrix in this case is flat, but good drainage is afforded, as is indicated by the slight dimpling resulting from pressure of a blunt probe.

The indications for the Elliot operation are chiefly for the relief of the simple progressive type, although it may occasionally be of service in the acute fulminating type, particularly when accompanied by very high blood pressure.

I operated such a case with a full iridectomy, which is recorded as case 5 in the tabulation. The patient obtained no relief from the operation, and the eye had to be enucleated. The blood pressure was of such high degree, however, that had I resorted to the usual method of iridectomy, I am satisfied the eye would have been lost immediately from intra-ocular hemorrhage.

On the contrary, L. Webster Fox cites a case in which the tension of the eyeball was 88 mm., and the blood pressure 290. By resorting to this method of operating Fox saved the eyeball.

Another type of acute glaucoma in which I would be inclined to use this operation, would be that in which the anterior chamber was nearly obliterated, for access to the aqueous chamber can be gained through this operation without undue likelihood of injuring the zonule, or inducing a secondary cataract, as is almost sure to ensue if iridectomy is attempted in the presence of a very shallow anterior chamber. This operation, however, is chiefly indicated in the chronic type, and it is in that class of cases that we may expect the best results, for through this means a permanent filtration drainage is established, and in the event of any sudden increase of tension the filtration cicatrix is seen to swell, while at the same time the tension remains about the same as before. Thus the danger to the optic nerve is relieved, and the likelihood of progressive atrophy rendered less positive.



Illustration No. 1.

Showing double Elliot operation. Large filtration cicatrix. Trephine holes showing through the conjunctiva.

Surgically the operation is nearly always a success, when properly performed, for the relief of tension is almost certain, and through this means blind and painful eyes may be saved for cosmetic reasons. This is shown particularly in case 4, in which the tension of the eye was 120 before operation, and since then has remained at 18. The operation was a success in this instance purely as a surgical measure, for the eye was blind before the operation, and is blind still. This case 4 illustrates the possibility of reducing tension by this operation, even though iridectomy is not performed.

There has been quite some discussion as to whether it is necessary to always perform an iridectomy. Elliot states that it is his habit to do so now, although in his earlier operations he frequently avoided it. There are many cases, however, in which it may be impossible to perform an iridectomy, but the mere fact that you have gained access to the aqueous chamber through the trephine hole, a free drainage is induced. *That drainage is positive even in the face of the flat cicatrix may be determined by pressure of a blunt probe. Elliot has called attention to this fact, and the slight dimpling which may be seen he considers to be positive evidence that filtration is taking place. In the larger cystoid cicatrix the dimpling is as positive as that which may be observed in the edematous leg of a chronic Bright's.*

The site to be selected for the operation is preferably over the upper half of the cornea, and when this situation is chosen, Elliot prefers that no sutures be employed.

Concerning the use of sutures, it seems to me that it is well to make use of at least a single one, as the subsequent cicatrix is less in width, and by the use of the suture there is little likelihood of post-operative displacement. That this accident may occur is positive, because Elliot mentions it, and states that should such accident ensue the flap may be readily replaced, and sutured at the first dressing.

If the operation is performed at either side, or below the circumference of the cornea, then suturing should be employed.

In my own series of cases some of the accidents which I have observed have been profuse hemorrhage into the aqueous chamber after full iridectomy, this recurring for several days. The blood was promptly absorbed after injection of horse serum 10 c. c. It is my belief that I have saved two eyes by the use of horse serum, which



Illustration No. 2.

Showing double Graefe operation and secondary operation at temporal side of left eye. Flat filtration cicatrix. Trephine hole slightly indicated as dark spot at edge of corna. Result positive.

otherwise would have had to be enucleated because of the profuse and recurrent hemorrhage.

Case 2 in my series was a boy of 17 years, who presented himself because of progressive loss of vision. Examination showed the vitreous to be tremendously clouded, and a diagnosis of neuro-retinitis was made. However, the tension of both eyes was in the high forties, and so I determined to resort to the Elliot operation merely as a therapeutic measure. No iridectomy was performed on this patient, and yet the improvement in the tension was very prompt, and while the central vision showed but slight improvement, the general condition is greatly bettered. The optic nerves can now be studied, and are seen to be slightly pale, and I am in hopes that progressive atrophy of the nerves will be stayed. It seems to me that it would be well to ascertain the tension in this class of cases, and to resort to this operation merely as a therapeutic measure. In my series of cases I have observed as yet but slight change in the visual fields, although with the passing of time it is possible that I may find that the fields will gradually increase.

There have been some cases of late infection reported, and in the minds of some operators this particular method is blamed, but judging from analogy it is my belief that a co-existing ethmoiditis may occasion the infection by an endogenous route, for the eye, being weakened by disease and this operation, simply becomes a point of least resistance. This appeals to me as far more likely than that infection should gain access through a supposedly healthy conjunctiva, for, if properly done, the operation in no wise interferes with the health of this membrane.

Another point which has been considered by some is the site of election in the presence of a previous Graefe operation. Elliot advises that the trephining be made at the center of the previous iridectomy. It is necessary, however, to exercise a little caution and extra care upon approaching the cornea, in order to split the lamella, for the purpose of this operation is primarily to gain access to the aqueous chamber, and to provide a leakage tract for the fluids of the eye to the sub-conjunctival spaces.

The three figures in this paper are diagramatic, and are sufficiently explained by the notes beneath each figure.

The two illustrations are from photographs of cases operated. The

first one is from case 10, and shows a successful double Elliot operation in which the schlero-corneal wounds and iridectomies are nicely pictured, and the large size filtration cicatrixes well depicted. The second illustration is case 11. The site of the operation is at the temporal side of the cornea, and it will be observed that the cicatrix is flat, and the trephine hole is hardly to be seen. However, the results of this operation have been an absolutely surgical and therapeutic success, for tension was reduced and vision improved, and all subjective symptoms relieved.

In discussing this operation I have referred to it constantly as the Elliot operation, the reason being that Dr. Fergus reported similar operations two months previous to Major Elliot's report. Fergus's first operation was reported in the *British Medical Journal,* October 2, 1909, while Major Elliot made his first report in *"Ophthalmoscope"* for December, 1909, referring to his first case, which was operated August 2, 1909. Such is Dr. L. Webster Fox's explanation for the Fergus-Elliot.

116 Washington Avenue.

Sabadilla for hay fever. The provings give a complete picture of hay fever, in addition to diarrhea and a nightly cough. Give a dose (0, 1X, 2X or 3X) promptly and repeat every ten or fifteen minutes during the attack. Some patients yield more promptly than others; some not at all, and some who have been helped partially by other remedies will be entirely relieved by sabadilla.—Harriet W. Hale, *North Amer. Jour. Hom.,* December, 1914.

TOXIC UVEITIS FOLLOWING VACCINATION

A. E. Ibershoff, M. D.

Cleveland, Ohio.

WHILE the name uveitis is essentially a generic one, its use is justified by the fact that the affections to which it refers are rarely so clearly defined as to permit a more specific term. The iris, ciliary body and choroid are so intimately related that a disease of one almost invariably involves, to some degree, the other. Such an involvement is often masked in the more chronic forms of disease, becoming more patent in direct ratio with the severity and acuteness of the attack. Such specific terms as iritis and cyclitis are, therefore, warranted only as inferentially emphasizing the preponderance of symptoms, especially when they are further qualified by the terms plastic, purulent or serous. In selecting the word uveitis as most applicable to the condition I wish to describe, I do so with the view of emphasizing the absence of any selective symptoms. My purpose in reviewing this case is not to cite an unusual condition, for such cases are by no means rare, but rather to point out certain variants in the classical symptomtology, and especially to call attention to vaccination as a possible etiological factor in this disease.

Case hitsory: Mrs. D. S. Aet, 40, married, no family, general health good, family history good. Patient was referred by Dr. A. B. Schneider February 12, 1914, complaining of failing vision in the right eye. She describes her sensation as that of a veil which she unconsciously attempts to brush aside by passing her hand over the eye as if to wipe it. The patient is able to distinguish only very bright objects with the diseased eye and was unable to count fingers at six inches. She was vaccinated about fourteen years ago, a very severe reaction following. Very soon afterwards she noticed that the vision in the right eye, which up to that time had been excellent, began to fail. There was not then, nor has there been at any time any pain or discomfort or other inflammatory symptoms. She consulted a good oculist, who recognized the condition as a possible sequela of vaccination and gave a very unfavorable prognosis as to restoration of function. With

occasional exacerbations and remissions, the patient declined all treatment for over twelve years.

Examination: The eye shows no congestion whatever, pupil slightly dilated and sluggish in reaction. Cornea rough and steamy, sensibility reduced, anterior chamber almost filled with a bluish, flocculent exudate which covered the pupil and permitted only the faintest suggestion of the fundus view. No deposits in Descemet's membrane could be made out, but apparently there were deposits on the lens capsule. The iris was free, no present synechiae or evidence of old ones. Tension by tonometer was 60 mm., in view of which, even in the absence of any knowledge of disc changes, I felt justified in making a provisional diagnosis of glaucoma secondary to uveal disease, giving, of course, a very guarded prognosis. Treatment consisted of instillations of Dionin, five per cent, Eserin sulphate one-half per cent and fomentations. Urinalysis ordered.

February 20. The exudate in the anterior chamber was much decreased and the patient showed a very decided improvement. Vision of 20/80 with a + 2.50 Cyl Ax 180 was brought up to 20/50. Urinalysis negative. Sweat baths and a vigorous bowel regimen was added to the treatment.

February 26. The anterior chamber was clear. Vision with correcting lens had increased to 20/30 and the tonometer now showed tension of 28 mm. Cornea was almost clear, lens deposits showed clearly and extensive floating vitreous opacities were now apparent. Fundus details were still much obscured and disc was ill-defined. Correcting lenses were ordered.

March 5. Vision the same. Filmy vitreous opacities very clearly seen. Fundus vessels, both arteries and veins engorged. Disc still obscured. Added potassium iodid to the treatment outlined.

March 19. Patient complains of a great loss of vision in past few days. Examination showed complete recurrence of the original condition, cornea steamy, tension 55 mm., pupil dilated, the same bluish exudate filling the anterior chamber. V-20/200. Patient was advised of the necessity of operative interference. Ordered increased myosis.

March 21. V. improved again to 20/60. Tension 45 mm. Having thus twice demonstrated that the exudate could be removed and the tension lowered with consequent improvement in vision by open-

ing the filtration angle, I advised an iridectomy, to which the patient consented.

April 9. A wide iridectomy was performed, which was followed by free hemorrhage. No complications ensued and the patient made a ready recovery.

April 22. The anterior chamber is free, cornea clear, tension 28 mm. and vision with correcting lens 20/50. During the following week the patient had a severe attack of acute irido-cylcitis with excruciating pain lasting a few hours, but which yielded readily to treatment. She has had no recurrence; tension remains normal and vision with correcting lens seven months after operation is 20/30. The vitreous is still turbid, lens deposits unchanged and while the disc is still hazy I am unable to establish any appreciable cupping. The only evidence of iris involvement, beyond the sluggish pupil seen at the beginning of treatment, was evidenced at the last examination by a very small posterior synechia of the sphincter margin at the point of section.

Several features of this case commend themselves to special consideration. First the tension factor. It is manifestly impossible to speculate as to the length of time the greatly increased tension had persisted, yet it seems obvious that the same factor which caused the tension to rise, viz., the gelatinous exudate, was also the principal cause of loss of vision. We are justified, therefore, in my opinion, to look upon the visual depression as a fair index of the duration of tension increase. If this be true it would indicate a remarkable potential resistance on the part of the optic nerve fibres and lamina cribrosa to pressure. Increased pressure furthermore is ordinarily associated with the earlier stages of the disease process, hypotension being the usual sequela marking the destructive changes which usually close the story.

Finally the etiological factor claims consideration. Exclusive of traumatisms, the generally accepted casual conditions are gout, rheumatism, scrofula, syphilis, tuberculosis, chlorosis and anemia. De Schweinitz has dwelt upon the importance of auto-intoxication and cites several cases in support of his belief. From all of these conditions it is obvious that toxic agents from whatever source must be reckoned the direct disturbing element in both acute and chronic uveal inflammations. The history of this case leaves no room for doubt

that the disease had its inception as a direct result of vaccination, but does not exclude the possibility of a mixed infection. In fact, the violent reaction resulting would call to mind either a contaminated vaccine or a faulty technique in its application, resulting in a septic condition which must then be looked upon as the causal factor of the uveal disease. Whether a properly prepared vaccine aseptically administered be capable of instituting ocular disease is a question which this case emphasizes but does not answer.

822-4 Rose Building.

Gum camphor to preserve urine for examination is much superior to thymol. Powdered camphor—about one gram for each twenty-four hour specimen, does not interfere with tests for protein, carbohydrates, Gmelin or Nakayama's tests for bile pigments, Obermeyer's test for indican, Fromer's test for acetone or the Gerhardt and Arnold-Lipliawosky tests for diacetic acid.

Urine preserved with thymol gives a positive test for protein when Millon's reagent is used, and the presence of thymol in urine causes a violet color in the chloroform extract of Obermeyer's test for indican. —*N. Y. Med. Jour.*, April 11. 1914.

SOME EAR CASES*

E. H. Linnell, M. D.,

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THE following case is interesting because of the many years the patient has been under observation, the diversity of the conditions presented, the gratifying result of the remedies prescribed homoeopathically, and the final results achieved.

Miss M. P. first consulted me in 1899, giving a history of chronic suppurative inflammation of the right middle ear of many years duration which had finally healed five or six years previously. About two months before consulting me the discharge reappeared. Examination showed the anterior third of the membrana tympani to be destroyed, a small posterior perforation through which pus was exuding, a polypus springing from the edge of the remnant of the membrane, and the upper posterior wall of the meatus tender and red. The ear was very sensitive to examination.

Under local treatment and hepar 6x attenuation the polypus disappeared, the discharge was arrested, and the perforation became somewhat smaller.

A few weeks later an abscess developed at the site of the original inflammation in the posterior upper surface of the meatus, or the lower anterior wall of the antrum, with considerable pain. This was incised and hepar continued. Relief was prompt and the discharge nearly ceased, but pain and tenderness developed at the tip of the mastoid, and the remedy was changed to capsicum, under which the mastoiditis promptly subsided. Suppuration from the tympanum continued and the discharge became offensive and irritating, causing small blisters on the skin of the meatus. For this condition tellurium 30 was prescribed, and under its employment the discharge became inodorous and the remedy was changed to silicia 30.

Subsequently a slight caries developed at the upper outer edge of the annulus tympanicus, but this was cured by aurum and the instilla-

*Read before the Society of O. O. and L., at Atlantic City, July 2, 1914.

tion of alcohol, ether and glycerine, and later of powdered boracic acid.

She had no more trouble until 1909, ten years later, when there was again slight suppuration, and examination showed a large part of the drum membrane to be destroyed, only Schrapnell's membrane and the ossicles remaining. There was thick, cheesy pus in the attic, which was curetted as far as it could be reached, and silicia 30 again prescribed with prompt improvement. Three weeks later, viz., in March, 1909, she again developed a slight mastoiditis, which yielded rapidly for a second time to capsicum and to better drainage from the attic, secured by enlarging the opening from the latter by cauterizing the edges with chromic acid. Subsequently the slight remaining suppuration yielded to silicia 30.

Perhaps I may be criticized for neglecting more radical measures. Did the result justify my conservative and expectant treatment? I would like the opinion and the criticism of the gentlemen present on this point.

The record of this case is not complete, however; the most interesting and unusual part is yet to follow.

A little more than two years later, viz., in June, 1911, she had a fall, striking her head on the sharp edge of a radiator and causing a fracture of the base of the skull on the left side about four inches long. This fracture commenced just above and behind the mastoid and extended through the petrous portion into the facial canal, producing total deafness and facial paralysis. Operation a few hours after the injury, while the patient was still comatose, demonstrated a linear fracture without depression, and a rupture of two branches of the middle meningeal artery with profuse hemorrhage. The severed arteries were ligated, the clot removed, and the patient made a slow but uneventful recovery, except the deafness, which improved but slightly.

When I first saw her, soon after the injury, the meatus was filled with blood. This was removed, but the meatus was so swollen as to prevent a view of the drum membrane. Subsequently it was found to be intact and a linear depression in the lower median wall of the meatus marked the line of the fracture.

She recovered no useful hearing in this ear. Bone conduction, though slightly diminished both in intensity and duration, was not

entirely destroyed, but she could not hear a large C fork in front of the ear. A very loud voice close to the ear could be perceived. She had a very annoying tinnitus, which still continues.

All sorts of treatment, medicinal, mechanical and electrical, including the intermittent Roentgen rays, were tried perseveringly without avail, although followed by some transient benefit. Attention was then directed to an endeavor to improve the function of the right ear.

I have no accurate notes of the hearing of that ear during all the years she had been under observation, for it had been considered practically useless and was disregarded as long as the left was normal. Treatment had been directed solely to arresting the inflammatory conditions which developed from time to time and to controlling the suppuration.

With the use of a cotton pellet we were gratified to find that she could hear my watch at six inches distance (it should be heard fifty inches by a normal ear). Later a rubber anatomical artificial ear drum gave her very considerable improvement, so that in ordinary conversation her deafness is but slightly noticeable.

Since writing the above the hearing was again tested with the following result. R. h. d. w. 2½ inches, Rinné negative, hears ordinary voice four feet.

Case 2. Mr. E. W. J., aged thirty-five, was first seen in January, 1912, when he gave a history of otitis media purulenta chronica dextra.

There had been a discharge from the ear in childhood, but he thought there had been none for many years, until the preceding month, when it had returned with considerable pain. Upon examination the bottom of the meatus was found to be filled with a mass of polypi and exuberant granulations. They were removed with the snare and cautery, and caries of the malleo-incudal articulation and of the inner wall of the tympanum was diagnosed. The membrana flaccida and the ossicles remained, but the membrana vibrans was absent.

At a subsequent visit, under local anaesthesia, the diseased area was curetted as thoroughly as possible. Curettage and cauterization of the granulation-tissue was practiced several times afterwards, but it continued to re-form rapidly after each treatment, so on the fourteenth of April he was operated more thoroughly under ether.

The malleus and incus, together with the remains of the drum mem-

brane, were removed, and the epitympanic wall was thoroughly curetted and much granulation tissue and superficial carious bone removed, especially from the vicinity of the additus ad antrum and the recess for the apex of the body of the incus. The knee of the facial canal was also carious and the curette penetrated the latter, slightly injuring the nerve; partial facial paralysis, vertigo and unsteady gait followed the operation. These symptoms, however, disappeared entirely in the course of a few weeks, and he made a complete recovery. The tympanic cavity became epidermicized and the hearing became better than for many years, ordinary conversation being readily distinguished at a distance of six feet.

There is nothing especially remarkable or unusual about this case, but it is interesting from the fact that a comparatively trivial operation, undertaken at the right moment, undoubtedly prevented the development of much more serious complications which would have necessitated more radical surgical procedures with perhaps a less satisfactory outcome.

Case 3. The following case was associated with high blood pressure, and it seemed to me that the condition of the circulation was an important factor in causing the ear symptoms.

I have seen very little in current literature on the subject, and further observation is requisite to establish a relation of cause and effect between increased arterial tension and affections of the internal ear. It seems to me, however, a plausible hypothesis and one worthy of investigation as affording perhaps valuable data for diagnosis and prognosis, as well as for treatment. It is hoped, therefore, that the case may be of some interest in this connection as well as for the prompt results which were seemingly attributable to the remedies employed.

The patient was a lady of middle age with marked neurasthenic tendencies. She was rather stout and full-blooded, and had been under treatment intermittently for several years for a naso-pharyngeal catarrh, associated with subjective sensations of fullness in the ears and slight vertigo. The hearing was unimpaired, the Eustachian tubes were normally patulous, and the membranae tympanorum were but little affected, the light spot being absent on the right side and somewhat smaller than normal on the left. I say the hearing was unim-

paired, but I have no careful and accurate data on this point. She was not conscious of any defect and superficial examination failed to show any. Very likely more careful tests would have demonstrated slight loss of function.

Her blood pressure was first taken in March, 1910, and found to be 240 mm. Mercury. Under treatment it was quickly lessened, and remained around 140, not far from normal, with occasional temporary increase to 160. The tinnitus, though relieved, did not entirely cease.

In April, 1911, she had a severe attack of Meniéres syndrome affecting the right ear. The symptoms were sudden severe vertigo, so that she could not stand, severe tinnitus, almost total deafness and entire absence of bone conduction. The acute symptoms were alleviated under the administration of quinine sulph. 3x. In the course of about two weeks hearing for ordinary conversation was so improved as to seem but little impaired, although in a room where several people were talking she was much confused and distressed. Hearing for the watch was now one and one-half inches and bone conduction was still absent. Loud sounds were very annoying and her own voice sounded strangely. For those symptoms chenopodium 6x was prescribed with benefit, and subsequently Kali. phos. 6x and 3x was followed by still further improvement. Ordinary conversation was heard at six feet, my watch at six inches, and bone conduction became nearly normal.

She has had no return of the trouble and her hearing has not deteriorated, notwithstanding the fact that her blood pressure has increased to 161-170 mm. and does not yield to treatment as formerly.

While it is not possible for me to make a positive diagnosis of the exact pathological lesion in the labyrinth, it seems probable that there was a slowly developing atheroma of the smaller vessels and finally a hemorrhage, occurring at the time of the seizure, which subsequently became absorbed. Her blood pressure had not been taken for a month previously, when it was but 130. She had, however, been to New York on a fatiguing shopping expedition the day before the attack, and there was probably a temporary increase in tension.

I should like very much to hear the opinion of those whose knowledge and experience in labyrinthine affections is superior to my own as to the probable correctness of my diagnosis.

Case 4. Merc. dulcis in subacute otitis media catarrhalis and closure of the Eustachian tubes.

F. E. S., aged ten, first consulted me April 22, 1912. He had been deaf in each ear since taking cold in the previous January. He gave no history of pain or discharge. He had chronic nasal catarrh, with obstruction of breathing, so that he slept with his mouth open. He was a very nervous child and no satisfactory examination of nose or pharynx was made to establish the diagnosis of turbinal hypertrophy or adenoids. R. h. d. w. was 1 in., L. h. d. w. was 2 in., and after inflation 12 in. in each ear. The membranae tympanorum were retracted, but otherwise normal. There was no enlargement of the tonsils. The cervical glands were somewhat swollen. I gave him merc. dulcis and a spray of alkalol. He reported again in two weeks. The catarrh was much better. The difficulty in breathing was gone. The drum membranes were no longer retracted, and the hearing for my watch in the right ear was 44/50 and that of the left was 42/50. Treatment was continued and he was not seen again.

Case 5. Lycopodium in tinnitus. E. P., aged twenty-three, had a suppurative inflammation of the right middle ear in January, 1911, which promptly healed under appropriate treatment.

In February, 1913, he again consulted me, complaining of a very annoying tinnitus in the same ear, which came on every afternoon at five o'clock, and lasted through the evening. No other symptom could be elicited, and on the strength of this characteristic aggravation I prescribed lycopodium 30, with immediate and permanent relief. Was it merely a coincidence or was it the effect of the remedy? I had never previously prescribed it for an ear affection, as far as I can remember, except for an eczematous condition upon and behind the auricle similar to that calling for graphites, but distinguished from that remedy by the constitutional symptoms. Upon looking up its symptomatology I found in Boenninghausen's repertory, ringing and roaring tinnitus, the former in capitals, the latter in italics. Allen, in his "Hand-book," mentions roaring and humming with hardness of hearing, with the modality that every noise causes a peculiar echo in the ear, reminding one of causticum. In his clinical remarks he states that numerous cases of chronic deafness, with and without tinnitus, have been cured, especially when occurring as a sequence to scarlet

fever. Houghton, in his "Clinical Otology," does not refer to it in connection with tinnitus, but speaks of its curative influence in moist eruptions of the outer ear in scrofulous subjects, and in suppurative otitis media. He states it is suitable when the membrane is destroyed with the exception of a small margin, and shows no disposition to heal, but is not sensitive to touch as with hepar. The pus is offensive but not profuse, and inclined to formation of crusts if not frequently cleaned.

I concluded after this study that lycopodium was probably homoeopathic to my case from the start, and was largely instrumental in affecting the rapid and permanent cure.

Case 6. The following case is perhaps worth reporting as illustrating results of conservative treatment, and the indicated homoeopathic remedy. There is nothing unusual or remarkable about it, but I believe serious complications were averted and a cure was more rapidly and completely effected than would have been possible without the aid of homoeopathic therapeutics.

Mrs. G. J. is a professional nurse. She first consulted me on June 16, 1909, suffering with an acute suppurative inflammation of the right middle ear. She had had pain for a week and a purulent discharge for several days.

On examination I found the m-t. swollen and red, with a perforation in the lower posterior segment. She was then free from pain. The ear was cleaned with dioxygen and a gauze drain saturated with a 50% solution of boroglyceride introduced, and merc sol. 6x prescribed. Two days later the membrane was less inflamed, the perforation was smaller and the discharge less. The same treatment was continued.

Soon afterwards she took cold and had a relapse. The membrane again became red and bulging, with increased suppuration and commencing involvement of the mastoid, which was red and sensitive and the seat of throbbing pain. A paracentesis of the membrane was made, a drain again introduced, an ice bag applied to the mastoid and bell. 6x prescribed.

The next day she was free from pain, the redness and swelling of the mastoid was gone, although it was still somewhat sensitive, and the discharge was less in amount. The same treatment was continued.

Three days later I found the incision in the membrane healed, but a moderate amount of discharge continued through the original perforation. The mastoid was again inflamed and the remedy was changed to capsicum. Drainage was omitted and instead the patient was instructed to irrigate the ear once in three hours with a warm sterile solution of boric acid, and following the irrigation to instil glycothymoline.

Under the above treatment the mastoiditis promptly subsided, but suppuration continued from the tympanum, the pus being bland and unirritating. The remedy was changed to silicia 30, and dioxygen and enzymol were used locally. After two months the perforation was entirely healed and the hearing was normal.

To one who had no confidence in homoeopathy a case like the above would have little weight in support of the efficacy of the medicines employed, the entire credit for the recovery being given to the local treatment. Those, however, who accept the doctrine of "similia similibus curentur" will, I believe, be willing to admit that the remedies were well chosen, and that they were valuable aids in the results achieved. Furthermore I believe a candid observer of similar cases treated without internal medication would acknowledge the influence of the latter.

While cases treated with internal remedies alone are undoubtedly of more scientific value, such cases can be but seldom observed because local tratment cannot often be neglected. It seems to me, however, that when the remedies are carefully selected in accordance with their pathogeneses, and administered singly, such clinical records if frequently reported would, in the aggregate, be of value in demonstrating the efficacy of homoeopathic therapeutics and in encouraging more careful prescribing. They are not then out of place in a meeting of this society.

Discussion.

Alton G. Warner: All aurists see so much of the deplorable results of "conservative treatment" applied without knowledge that I think we are apt to lose sight of the fact that there is such a thing as intelligent conservatism. I think the writer of the paper has shown that the results justified his treatment. Merc. dulc. is, I believe, the most efficient remedy we have in subacute catarrhal otitis media.

A PRACTICAL METHOD OF CORRECTING SEPTAL DEFORMITIES*

Irving Townsend, M. D.,

New York City.

ONE hesitates to proclaim as new any operative procedure, but as far as I am able to ascertain from a review of recent literature the operation I am about to describe differs from any other in several essential details. As we all know, the various methods of submucous resection have to a great extent superseded the means previously employed in the removal of septal irregularities and deviations. The important considerations to be attained being acknowledged as the restoration of free nasal breathing, drainage and the preservation of a healthy mucous membrane, we naturally give the preference to a means that will attain all these in the highest degree. As the majority of deflected septa are associated with a ridge or crest along the base or triangular cartilage, this method is applicable to at least fifty per cent of the cases we are called upon to operate.

The proposed operation may be described as follows:

First. A vertical incision is made on the side of the prominence about one-half inch long from the anterior end of the triangular cartilage upward.

Second. A broad Hajek or bevel-edged chisel is inserted at the lower end of the incision at base of the septum, slightly above the level of the floor of the nares. The chisel is driven directly backward, cutting through the bony crest of the superior maxilla, the under surface of any exostoses that may be present, and extending as far backward along the base of the vomer as any deflection exists. With the periosteal elevator the flap of muco-periosteum is peeled up on the side of the original incision, after which the bony wedge is pried out with the chisel or angular forceps.

We consider these bony prominences, ridges, spurs, etc., as the result of traumatism which induced a slow inflammatory process and

*Read before the Society of O. O. and L., at Atlantic City, June 30, 1914.

gradual over-growth by which the cartilage is gradually tilted over in the direction of least resistance. This bony base forms a sort of fulcrum, which when removed releases the base of the cartilage and allows it to return to its normal position. When the deviation involves the bony septum as well, we insert the broad blade of an Adams forceps on the convex side and break over the anterior edges of the vomer or the ethmoid plate.

The usual dressings dipped in the balsam oil mixture are then applied and allowed to remain in situ for two days.

The advantages of this method are that it can be done in ten or fifteen minutes, that there is little likelihood of sloughing of flaps and *no* danger of perforation, that it conserves to a greater degree the integrity of the mucous membrane, and, lastly, that the *final results* are more uniformly satisfactory.

While it is not claimed that this method is always applicable, it is my belief that it will be found preferable to any other in the kind of cases I have described, and a practicable substitute for the usual method of submucous resection of the septum in the majority of cases.

Discussion.

W. E. Reily: I would rather use a tampon than a splint, because it holds the tissues better in position; also you can make a tampon as tight or as loose as you want to. Much of the perfection of the result of this operation is in proportion to your intelligence in using the tampon. The operation as described by Dr. Townsend commends itself by its simplicity and effectiveness.

Irving Townsend: The idea is to cut straight back through the floor of the septum and to dissect up a flap from the prominent side over the exostosis, and then to raise it up and cut out a bony wedge from beneath it. Then you can spring it back into place. It will hold its position. You may not get a perfectly straight septum, but what you do get will be better, because it will be covered by normal mucous membrane. The majority of operations involves some such manoeuver and this seems to me a simple way of accomplishing the object effectively. Sometimes it may be necessary to resect the cartilage itself. It leaves a good septum free from non-secreting dry spots. Many of these septal resections leave nothing but a membranous septum that is of no particular utility.

E. W. Beebe: What do you use to pry out the bone with?

Irving Townsend: I pry it up with a chisel and take it out with a dressing forceps. It is practically loose except for membranous attachments.

M. W. Conrow: Do you have to chisel on both sides?

Irving Townsend: Frequently it is not necessary to cut through the mucous membrane on the other side. Sometimes we have to do it when there is a great deal of bulging.

Dean W. Myers: What do you do with the flap on the opposite side when it is cut with the chisel?

Irving Townsend: The cut on the opposite side, if made, is along the floor and does not make any trouble. It heals up perfectly. It may need a little packing for a couple of days, but nothing more.

John L. Moffat: Do you have less or more hemorrhage than with the ordinary operation?

Irving Townsend: It is rare for the hemorrhage to amount to anything. There is no more than in any other septum operation.

M. W. Conrow: Do you do this work with local anesthesia?

Irving Townsend: That depends mostly upon the temperament of the patient. I suppose that I do two-thirds of my cases under general anesthesia. If they will stand for local anesthesia it is more convenient.

John L. Moffat: Have you ever tried rectal anesthesia?

Irving Townsend: No, I have never tried that.

E. J. George: I understand that Dr. T. L. Shearer is here with a discussion prepared for Dr. Douglas Macfarlan's paper on "Positions for Skiagraphing the Nasal Accessory Sinuses, with Illustrations." We have passed the paper on account of the absence of the author, but I am informed that Dr. Shearer's discussion is practically a paper in itself and as he has to go after this session we will hear his discussion now.

CATARACT EXTRACTION WITH PRELIMINARY IRIDECTOMY, IRRIGATION AND DISCISSION—RESULTS OF FORTY-TWO CASES

FRANCIS B. KELLOGG, M. D.,

Los Angeles, Cal.

MY method of operation is as follows: I make a routine practice of doing a preliminary iridectomy except in cases from a distance with a limited amount of time at their disposal. I believe this has been an important factor in the success which has quite uniformly attended my work. It is also my practice to do a discission of the posterior capsule about a month after extraction. Both the preliminary iridectomy and the discission have been made a routine practice, on the principle that the one adds a few chances to the safety of the operation and the other adds appreciably to the resulting vision. For a number of years I have, in extracting, practiced irrigation of the anterior chamber for removing residual lens substance. This is especially useful in cases where the cataract is not fully matured, making it safe and justifiable to remove an unripe cataract where the patient would otherwise be condemned to perhaps years of waiting for full maturity. Preliminary capsulotomy still further facilitates operation upon unripe cataract. Reference is made to this later on.

So far as resulting vision goes (which is the supreme object of the operation) I believe that my results will compare favorably with those following the extraction in the capsule, and they are better than any I have seen published. In one case, that of Mrs. F., there was complete failure. The eye showed chemosis upon the second day and went through the course of virulent iritis with complete obliteration of the pupil. This was entirely unexpected, as the operation went unusually smooth. At least three of the cases operated were pathological cases, Mrs. J. C. D. being a myope with choroiditis and Dr. S. being operated primarily for glaucoma by a large iridectomy, the cataract being extracted subsequently upon subsidence of glaucomatous symptoms. In both of these cases useful vision was obtained in the pathological eye.

In the third case (No. 5) an operation for cataract had been performed some years previously and the eye had gone practically blind with optic atrophy. The other eye contained a mature cataract through which there was faint perception of light. This led me to operate in the hope that there might be some vision remaining in this eye, which would perhaps be useful for the remainder of his life. This operation was successful, resulting in a clear pupil, but the presence of marked optic atrophy of course seriously impaired the result. It was, however, quite successful considering the condition of the optic nerve, and enabled the patient to see his way about, which was gratifying.

Nos. 26 and 27 represent the right and left eyes of Dr. J. H. B. The operation of the right eye was uneventful, resulting in perfect vision. The history of the left eye, however, is less favorable, and shows how important an apparently insignificant factor may become in its bearing upon the final result. The normal saline solution used for irrigation is tested by allowing the stream to run upon the finger until it is warm. This was done, but there was a delay of a minute or two before it was applied to the eye, which allowed it to cool off slightly in the rubber tube. When this solution touched the eyeball there was an orbicular spasm, causing a loss of vitreous. In all my twenty-five years of experience this was the fifth case in which vitreous was lost. As was to be expected, iritis followed, and it was at least a month before the eye cleared up. My records show 6.18 as the resulting vision at the last test, but the doctor informs me that this has materially diminished. The vision in the right eye, however, remains perfect and has enabled him to resume practice.*

Cases 41 and 42 were both highly myopic. Neither of them has undergone discission or refraction. The vision before operation was fingers at one foot. Because of the immature state of the cataract a preliminary iridectomy was performed. Four weeks following the preliminary iridectomy the patient's pupil was widely dilated, the eye anesthetized and the cornea punctured half-way between the vertex and the right end of the equator. The vertical and horizontal incision was then made in the capsule and the needle withdrawn. The patient was then sent to the hospital and the extraction was performed on the following day. By incising the capsule the aqueous humor of the anterior chamber is absorbed into the lens and works a separation

Name	Age	V. bef. Op.	Complications.	Pre. Iri.	Disc.	Final V.
1. J. D.	68	P. of L.	None.	yes	yes	6/6-1. Jaeg. 1.
2. Mrs. R.	67	Fing. 2½ feet.	Dense Secondary.	yes	yes	6/5. J. 1.
3. J. W.	78	P. of L.	None.	yes	yes	6/12. Jaeg. 1.
4. Mrs. S.	70	P. of L.	None.	yes	yes	6/9. Illit; can sew.
5. H. P.	79	P. of L. reduced.	Optic Atrophy.	no	yes	6/36.
6. Mrs. W.	59	Fing. 2½ meters.	None.	yes	yes	6/9-2. Jaeg. 1.
7. L. R.	75	P. of L.	None.	yes	yes	6/12. Jaeg. 3.
8. Dr. M.	66	Fing. 1 ft.	Second. Hylitis vit. opacities.	yes	yes	5/24.
9. W. M. P.	62	P. of L.	Iritis.	yes	yes	6/5. J. 1.
10. Mrs. D.	62	P. of L.	Loss of Vit. exp. of lens in capsule.	yes	no	6/5. J. 1.
11. Mrs. M.	82	P. of L.	Erythropsia and retinal irritat.	yes	yes	6/12-2. Jaeg. 3.
12. Mrs. A.	56	P. of L.	None.	yes	yes	6/5. Jaeg. 1.
13. Mrs. A.	57	P. of L.	None	yes	yes	6/5. J. 2.
14. Mrs. W.	78	P. of L.	None.	yes	yes	6/9. J. 2.
15. C. S.	78	P. of L.	Ant. Chamb. 1 wk. in reforming	yes	yes	6/18.
16. W. V. J.	77	P. of L.	Iritis.	yes	no	6/18.
17. J. W. K.	72	P. of L.	Large cent. exc. of O. D. with atrophic base.	yes	yes	6/18 +2. Jaeg. 3.
18. Mrs. E.	70	P. of L. Very dim.	None.	yes	no	6/6 —3. Jaeg. 1.
19. J. V.	65	Fing. 2 M.	Loss of Vitr.	yes	no	6/9 —1. Jaeg. 3.
20. Mrs. B.	52	Fing. 4 ft.	Diabetic Nuclear Cataract.	yes	no	6/12. Jaeg. 4.
21. Mrs. B.	53	Fing. 5 ft.	Diabetic Nuclear Cataract.	yes	no	6/9. J. 1.
22. G. B.	49	Fing. 1 ft.	None.	no	yes	6/6. J. 1.
23. G. B.	49	Fing. 1 ft.	None.	no	yes	6/6. J. 1.
24. W. H. P.	68	P. of L.	Mkd. Cat'l Opth'l.	yes	yes	5/12 —2. Jaeg. 2.
25. Mrs. C.	72	P. of L.	Dacro-Cyst. mild.	yes	yes	6/9. Jaeg. 1.
26. Dr. B.	61	P. of L.	None.	yes	yes	6/6. Jaeg. 1.
27. Dr. B.	61	P. of L.	Palpebral spasm. Loss of Vitreous followed by irit.	yes	no	6/60.
28. Mrs. F.	75	Fing. 1 M.	Nuclear Cataract Plastic iritis.	yes	no	0.
29. S. S.	72	P. of L.	None.	yes	yes	6/9 —1. J. 1.
30 P. J	78	Fing. 1 ft.	None.	yes	yes	6/9 —1. Jaeg. 1.
31. A. B. C.	77	Fing. 5 ft.	Iritis.	yes	yes	6/9 —1. Jaeg. 1.
32. A. B. C.	78	Fing. 5 ft.	Iritis with hypopion. Disc. also followed by hypopion.	yes	yes	Not taken.
33. Mrs. R.	48	P. of L.	Pat. flinched in Pre. iri. and tore iris. No. bad effects.	yes	yes	6/5 —5. Jaeg. 1.
34. W. T.	66	P. of L.	Other eye blind.	yes	yes	6/9. Jaeg. 1.
35. Mrs. D.	70	P. of L.	Myopic about 10.	yes	yes	6/9 —1. Jaeg. 1.
36. Mrs. D.	70	P. of L.	Myopic; O. D. Atroph. and degenerative changes.	yes	yes	6/60.
37. Dr. S.	59	P. of L.	Large iridectomy for Glaucoma.	yes	yes	6/24.
38. Dr. S.	59	Fing. 2 ft.	None.	yes	yes	6/12. Jaeg. 2.
39. Mrs. H.	70	Fing. 2 ft.	None.	yes	yes	6/6. Jaeg. 1.
40. M. R. W.	35	Fing. 1 ft.	None.	yes	no	6/12.
41. Mrs. G.	75	P. of L.	Highly myopic.	yes	no	6/36.
42. Mr. C.	53	Fing. 1 ft.	Highly myopic 12.	yes	not yet	Jaeg. 4.

Used Irrigation on all except first six.

between the lens and the capsule, with the effect that upon extraction the lens slips out without leaving lens substance behind. This procedure, coupled with irrigation, makes it possible to operate an unripe cataract and thus shorten the period of impaired vision for the patient. Dr. Homer B. Smith, of Norwich, New York, is the leading authority upon preliminary capsulotomy and has designed a knife needle especially adapted to the purpose. I regard the procedure as a distinct addition to the resources of the oculist. The case above cited is as yet the only one in which I have adopted it, but the results were such as to establish its distinct advantages.

To summarize: Out of the forty-two cases there was one total failure, two cases in which low vision was due to pre-existing disease, viz.: Optic atrophy and glaucoma, and three cases of high grade myopia with degenerative changes. This leaves only two eyes with low vision as a result of inflammatory reaction, exclusive of the one total failure, but even in these two cases useful vision resulted. Thirty-four of the forty-two cases recovered with practically normal vision.

*Note: I have not examined Dr. B. since shortly after operation. No discission was performed in the left eye, and a colleague who has examined the eye since informs me that there is a secondary membrane in the pupil.

To divide the dose, such as a tablet containing a fraction of a certain weight (grain or gramme) so as to give a smaller fraction: Dissolve the larger dose in as many volumes of water (minims or cubic centimeters) as equal the denominator of the smaller fraction, and give of this solution a number of the same volumes equal to the denominator of the larger fraction; *e. g.,* dissolve a 1-8 grain tablet of morphin sulphate in 64 minims of water; 8 minims of this solution contain 1-64 of a grain of the morphin sulph.—*Jour. A. M. A.*, December 13, 1913.

TONSILLOTOMY vs. TONSILLECTOMY*

By Richard H. Street, M. D.

Chicago.

THE title of this paper was assigned me and was rather in the nature of a surprise, as I was under the impression that controversy upon this subject was a thing of the past and that all the tribunals had rendered a decision in favor of tonsillectomy, but as this court has seen fit to re-open the case I shall endeavor to prove to your honor and the gentlemen of the jury that the decision was a just one.

My aim shall be to show you that tonsillotomy is an obsolete, incomplete and ineffective procedure and that tonsillectomy is modern, complete and effective and the only method of thoroughly eradicating, not only the diseased tissue, but its attending pathological manifestations upon remote organs of the body. This will be accomplished by ignoring the former and devoting our time to the latter.

To familiarize ourselves with the subject, let us briefly review the anatomy of the faucial tonsil which is situated between the anterior and posterior pillars of the fauces, partly enclosed in a fibrous capsule and lying upon the superior constrictor muscle of the pharynx. It consists of four chief elements, connective tissue, germinating follicles, interfollicular tissue and the crypts.

(a) The connective tissue, the trabecula and the reticulum act as a supporting framework to the tonsil substance, the trabeculae carrying the blood vessels, nerves and lymphatics.

(b) The germinating follicles are the centers wherein the mother cells of the leukocytic group undergo karyokinesis and form young lymphoid cells.

(c) The inter-follicular tissue is made up of lymphoid cells of different sizes and shapes in various stages of development.

(d) The crypts, the most characteristic structure, consist of an invagination of the surface epithelium, which has undergone a very interesting anatomical change. The sub-epithelial connective tissue

*Read before the Buffalo (N. Y) Clinical Club.

disappears as soon as the epithelium starts to form the crypts, which permits the epithelial cells to come in direct contact with the lymphatic structure of the tonsil. This you see is of marked pathological importance, as there is not a compact unbroken barrier for protection as there is upon the surface of the gland. When one takes into consideration how plentifully supplied the tonsil is with lymphatics, which empty into the anterior cervical chain, and its generous blood supply, it is a wonder how any one can *advise* and *practice* removal of the upper part of the crypts only, which happens when tonsillotomy is performed, thus sealing up foci of infection with scar tissue or leaving open crypts with gaping mouths ready to seize upon any infection that may pass. This alone, to my mind, ought to be sufficient argument in favor of tonsillectomy as a prevention of systematic complications and cure for local disease.

Let us consider briefly some of the remote pathological conditions which have been indisputably traced to the tonsil as the focal point of infection.

For some years we have known that the faucial tonsil was the most frequent port of entrance of the tubercle bacilli. Seven years ago the nose and throat department of the Hahnemann Medical College of Chicago had microscopically examined one hundred pairs of tonsils removed from supposedly non-tubercular clinical and private patients. Ten per cent of these tonsils showed, according to the laboratory report, tubercular processes in different stages of development. Had tonsillotomy instead of tonsillectomy been performed, it is reasonable to suppose that some of these patients would now be in their graves.

Rheumatism in its different forms is becoming almost synonymous with diseased tonsils. Some writers claim that the pendulum has swung a little too far, but I am convinced that the day is not very distant when it will be proven that rheumatism is an auto-intoxication, auto-infection, and will be traceable in all cases to a focal point somewhere within the human economy. I had the temerity to make this prophecy more than ten years ago, but it received anything but favorable comment and was soon forgotten. Since that time much has been said and written by men in authority supporting my theory. The laryngologists have made much progress in this line of inves-

tigation and have records of many hundred cases of rheumatism, muscular, articular and the acute febrile form, to prove their claim.

Infection from the tonsil has a marked affinity for the cardiac structure. Many cases of pericarditis, endocarditis and valvular lesions have been directly traced to that source. Most of the cases present a history of rheumatism in conjunction with tonsillar afflictions. We used to consider rheumatism the cause of the heart difficulty. Now we know that the tonsil is to blame for both conditions. It is not at all infrequent for our tonsil cases to show a mitral lesion. The rapidity with which the trouble disappears after tonsillectomy would lead one to at least suspect the cause of the trouble.

The latest crime charged to the tonsil is its relation to pathological conditions of the thyroid gland. My personal experience is limited to one case which I will refer to later, but Dr. Frank Billings reports several cases in which the goitre was traceable to tonsillar infection combined with rheumatism. He cites several cases of simple and exophthalmic goitre apparently cured by tonsillectomy.

In case my arguments in favor of tonsillectomy have not been sufficiently convincing, I will present my witnesses. The first is:

Case 1. N. L., boy, aged 6, American. Diagnosis—Tonsillitis chronica; hypertrophy of pharyngeal tonsil; cervical adenopathy. Examination—Fairly well nourished; faucial tonsil slightly enlarged, showing open crypts filled with caseous secretion; very large adenoid mass; lungs and heart normal; tubercular tests negative. History—Parents both tubercular; sister died at age of seven and one-half years from tubercular meningitis; nocturnal mouth breathing, and restlessness; anorexia. Treatment—Tonsillectomy and adenectomy performed October 30, 1814. Two days later discharged to family physician.

The object in reporting this case is to show that this patient with tubercular tendencies and environment, but manifestly non-tubercular, will probably, with proper medical and hygienic care, grow to healthy manhood, but undoubtedly would have become tubercular without proper surgical interference.

Case 2. Miss M. B. H., American, white, aged 21, came under my care November 3, 1911. Diagnosis—Tonsillitis chronica; rheumatism, muscular. Examination—Faucial tonsils swollen, red, open

crypts filled with secretion. History—Has always had more or less sore throat (pharyngitis); annual mild attacks of rheumatism, two or three times during the winter months, of sufficient severity to confine her to bed for a week or ten days. Treatment—Tonsillectomy performed December 12, 1911. Subsequent history—No return of "throat trouble" or rheumatism.

Case 3. L. C. D., boy, aged 19, elevator operator, American. Diagnosis—Tonsilitis chronica; rheumatism, articular. Examination—Tonsils enlarged, swollen, red, crypts showing deep infection. History—For some years has had frequent attacks of tonsillitis; last four attacks have been followed in a few days by pain in the joints, swelling and redness. Treatment—Tonsillectomy performed on November 14, 1910. Subsequent History—No return of tonsillitis or rheumatism.

Case 4. Mrs. H. L. R., married, aged 36, American. Consulted me October 22, 1914. Diagnosis—Tonsillitis chronica; rheumatism. Examination—Large amount of tonsil tissue in both fauces; open crypts filled with caseous secretions. History—For past ten years has had attacks of peritonsillar abscess, often several times in one year; tonsillotomy performed in 1909; followed by freedom from trouble for three years. Then had several attacks of quinsy at few months intervals; has had four attacks since February 14, 1914, also constant troublesome rheumatic pains in muscles and joints for past year. Treatment—Tonsillectomy advised.

Case 5. Miss S. J., white, aged 22, American. Diagnosis—Tonsillitis chronica; cervical adenopathy (slight); simple goitre; laryngitis, sub-acute; general rheumatic pains. Examination—Tonsils submerged with infected crypts, anterior cervical glands palpable, thyroid gland markedly enlarged. History—Has never had tonsillitis, slight attacks of pharyngitis at long intervals; general rheumatic pains more or less constant. Treatment—Tonsillectomy May 16, 1914. Subsequent history—Goitre reduced at least one-half in size; rheumatism and hoarseness disappeared; feeling of pressure absent.

Tonsillectomy is not a minor surgical operation to be performed in one's office or by the medical tyro who happens to possess a few instruments and a patient, but is a major surgical procedure in every sense of the word and is entitled to the same respect, consideration and care that is given an abdominal section. 32 North State Street.

A RECENT SERIES OF MASTOID CASES*

By Gilbert J. Palen, M. D.

Philadelphia, Pa.

DURING the period from the first of February until the middle of March of the present year there occurred, in Philadelphia and vicinity, a very marked epidemic of acute mastoiditis. This epidemic is noteworthy—

First. Bcause it occurred earlier than the epidemics of mastoiditis which usually occur in our district. It is usual, with us, to expect the larger number of acute mastoid cases to occur in the month of May. This epidemic occurred, as you will note, considerably earlier and, furthermore, the usual epidemic of cases did not occur in the month of May.

Second. The larger number of cases which came under our notice gave a preceding history of tonsillitis, this being followed usually, about the time of the subsidence of the tonsillitis, by the mastoid infection. In all the cases the tonsil on the side of the affected ear had been, comparatively, much more involved and sore than the other tonsil, and this soreness, which existed in the region of the tonsil and rather diffusely through that side of the neck, persisted for some time after the mastoid operation as a rather prominent symptom.

Third. While we did not see the cases during the time of the throat condition, we were impressed with the belief that some of these cases were cases of septic sore throat, one of them especially, occurring in a boy in a preparatory school who had not been drinking milk until about one week before his attack. In the same school the physician who sent the case had treated seven other and marked cases of sore throat.

Fourth. From the time of the beginning ear involvement all symptoms were excessive and the process unusually rapid, the mastoid symptoms following the middle ear symptoms very closely. In case No. 12, oedema and tenderness over the mastoid were present on the day the pain started. The drum was opened and four days later,

*Read before the Society of O. O. & L., at Atlantic City, July 2, 1914.

on opening the mastoid, there was found complete destruction of the entire mastoid and the inner plate, with extensive exposure of the sinus and dura. This case subsequently, after running a normal temperature for ten days, developed meningitis, was trephined and recovered. Others of the cases ran very similar courses, the destruction of the mastoid being very marked during the short period of time.

Fifth. In our series of twenty cases, eleven showed streptococci in the aural discharge or in the cultures taken from the mastoid wound. One showed pneumococci and one staphylococci. The other seven cases were not cultured, being rush emergency cases. From the clinical course of these cases, as compared with the other streptococcic cases, we feel sure that many of them were also due to the streptococci. It is interesting to note that in one case, No. 13 (a case of septic sinus thrombosis and diffuse meningitis) streptococci were found in the aural discharge, in the mastoid wound, in the spinal fluid as well as in the blood culture.

Sixth. The most virulent of the series of cases were streptococcic infections. These exhibited clinically excessive symptomatology, with marked rapidity and excessive destruction of tissue. In the three cases of intracranial complications, the infecting organism was the streptococcus. In one streptococcic case erysipelas developed six weeks after the operation. In case No. 15 by contrast, which was a staphylococcic infection, the condition had existed for five weeks with very little destruction of the mastoid, there being only some trouble in the tip with swelling of the sterno-mastoid muscle, simulating Bezold's mastoiditis.

Seventh. Blood counts were made in twelve cases and proved of considerable value as a guide as to when to operate. The majority of these showed a high leucocytosis, five cases exhibited a marked increase in the percentage of polynuclears and the remaining showed a polynuclear count very close to eighty-one per cent. In those cases we could follow regularly and at frequent intervals the blood count, we found the leucocytosis and polynuclear count diminishing with the lessening temperature.

Eighth. We found in five cases, in addition to the local soreness in the neck, a generalized soreness of the body, different entirely from the soreness usually complained of with la grippe. Two cases exhib-

ited the joint symptoms. In case eleven this took the nature of pain and tenderness in the extensor tendons at the knee, elbow, shoulder and the erector spinae group and ankle joints. These pains did not remain constantly, but shifted from one location to the other, the most constant being that of the erector spinae group. Case No. 7 had a distinct swelling about the right ankle joint in which the synovial sacs became inflamed, with some exudate. In a still further case, No. 19, the boy now has a generalized stiffness of the muscles of arms and legs, causing some spasticity in movements.

Ninth. Seven of the streptococcic cases exhibited a marked frontal headache, this of an intense type coming on usually in the afternoon and about the time of the high rise in temperature. (A case now under care in which there was a mixed infection, pneumococci and streptococci, is exhibiting a similar symptom.) This headache is distinctly frontal and different from the temporal headache which we find so frequently in cases of dural exposure.

Tenth. In the streptococcic cases the temperature continued ten days to three or four weeks, the characteristic being that the highest rise in temperature was either at five or seven P. M., from which time it gradually dropped during the night and until about seven A. M., when the temperature would reach a point slightly above normal, again rising with distinct regularity on the succeeding day. The temperature reached higher in the streptococcic cases, reaching 103 or 104 F. In case eleven this temperature continued for seventeen days, and in case twelve, fifty-three days, the temperature dropping toward normal rather rapidly. The cases of pneumococcic and staphylococcic infection ran a rather uneventful course, the temperature dropping very soon after operation and remaining at that point. The pulse in the streptococcic cases was universally high. It followed during the course of the temperature the rises and falls of this, but after the temperature had reached normal the pulse continued still high in five cases, with irregularity in two cases, and in case eleven a murmur was heard over the base of the heart which was considered haemic. In case twelve a sudden drop of the pulse to seventy-two, with elevated temperature, marked the beginning of his meningitis. Chills and sweating were, with two exceptions, absent. Case thirteen, the case of septic sinus thrombosis and diffuse meningitis, exhibited the typical up and

down temperature with marked chills and sweating and case eleven had one slight chill. Generally, however, these cases which ran a temperature and pulse changes, did not show either chilliness or sweating. Two cases, eleven and twelve, exhibited albumin in the urine.

Eleventh. The treatment was the usual after treatment of mastoid cases, with the exception of cases eleven and twelve, seven, ten and thirteen, in which vaccines were used. In cases seven, ten and eleven stock vaccines were given; in case twelve an autogenous vaccine. It is impossible for us from these few cases to state whether the vaccines were of any marked benefit. Later in the epidemic we started to develop autogenous vaccines from the first culture made at the time of paracentesis and to give vaccine injections early The cases in which we used this were so few in number that, while none of them came to mastoid operation, it is impossible to say whether the vaccine was the cause or not. We feel that this could only be proven after a long series of cases. In case eleven, after each of three injections, he complained within a few hours of blurred vision. Whether this was coincidence or not we cannot state. We could note no changes in the temperature or pulse or any marked reaction following the vaccine injections.

Twelfth. The wound healing during the course of the temperature in the streptococcic cases was slow, compared with the other cases, and did not respond to the usual stimulation. After the temperature had dropped to normal, the first signs of healthy granulations could be found.

Each one of the cases which we have drawn upon is in itself an interesting case, but time will not permit a detailed discussion of each case. We have simply attempted to bring out a few general deductions for discussion.

We feel that in mastoid cases much of the value is lost as regards temperature and pulse changes unless these obervations are made every two or three hours.

The only fatality was in the case of number thirteen, which was a case of acute exacerbation of a chronic suppurative media of twenty-eight years standing and which we have studied among the acute series because of the type of infection. This, as before stated, was a case of septic sinus thrombosis, which was opened with ligation

of the jugular, but death resulted from the septic menengitis, which was already established.

2102 Chestnut Street.

Discussion.

J. V. F. Clay: It was my privilege to follow this series of cases of acute mastoiditis which Dr. Palen has reported, and to study the clinical course of each individual case.

Every year there is the season's harvest of cases of acute mastoiditis. This occurs, as Dr. Palen has said, in Philadelphia and vicinity during the month of May. I have seen a few of these seasons, but I have never seen such virulence as was present in this series. In 1910 we saw a rather large mastoid epidemic, but while we had numbers the virulency was absent.

The number of cases having their onset in acute tonsillitis is a warning of the necessity of most careful attention to the ears during the course of acute tonsillar infections.

The question of infection is interesting, and I would like to cite two observations. In a house lived six adults and one child. The child developed tonsillitis and in three days an acute otitis media, which cultured pure long chain streptococci. Seven days later the mastoid was opened and pus from this cultured pure long chain streptococci. At the time the child developed otitis media one of the adult members of the family developed quinsy. The pus from this cultured pure long chain streptocci. At the same time one of the other adults developed tonsillitis and culture from the throat revealed long chain streptocci in pure culture. The husband of the last mentioned adult, and father of the child who had the mastoiditis, developed an acute tonsillitis with enlarged cervical glands. Culture from his throat also revealed a pure long chain streptococci. The three members who were affected are home constantly, while the adults escaping infection are at home but a few hours each day. The milk supply was investigated and any merchant who served eatables was looked into, but no suggestions were discovered as to source of infection. Another observation occurred in the service of Dr. Palen in the wards of Hahnemann Hospital. A case of chronic suppurative otitis media was being held for radical mastoid operation. Previous culture of the discharge from the ear revealed numerous unidentified bacteria. He was pre-

pared for operation, but the night before his temperature rose to 104. He had an acute tonsillitis. About a week later his mastoid was opened. Free pus was found and culture from this showed pure streptococci. On both sides of this man in the ward were cases of acute strepotccic mastoiditis.

Bacterial examinations are certainly of great aid in these cases. In several of the series the demonstration of the streptococci, together with data at hand, was convincing enough to lead to immediate operation.

I must certainly concur with Dr. Palen's observations made in this study and congratulate him upon his successful conduction of a very serious series of cases and his excellent summary of his study. I feel much indebted to Dr. Palen for the great privilege of studying these cases with him both in his private work and in the wards of the hospital.

John L. Moffat: Has any one here had experience with Formamint tablets? Each one is said, while dissolving in the mouth, to liberate one-fourth milligram of nascent formaldehyde. I prescribe them in cases of infected tonsillitis or pharyngitis, pyorrhea, alveolaris, before and after my visit to the dentist, and when exposed to ordinary coughs or colds—as in a lecture room or fraternity chapter house.

G. B. Rice: I have had some experience with the Formamint tablets, and have used them after tonsillectomy, but I cannot speak of their effects with certainty. Some years ago we had an epidemic of this kind at the Homeopathic Hospital in Boston. Twenty-two of the internes and nurses were attacked. In some cases the mastoid was affected; there were abscess formations, glandular involvement, with a tendency toward high temperature.

The attack usually began with a chill, followed by temperature, perhaps 104, localized swellings, pain, and breaking down of the tissues involved. The cultures proved to be almost exclusively micrococcus catarrhalis, a variety supposed not to be often virulent, as they exist in nearly everybody's throat without producing symptoms.

At this period these micro-organisms must have taken on an unusual virulence, for the epidemic was quite general, as I have said. It is well known that harmless forms of micro-organisms do at times take on an increased activity and virulence. All micro-organisms in fact vary

in activity and virulence in different epidemics, while all morbid vary a great deal in their ability to do damage to the system.

J. Ivimey Dowling: I saw an interesting case of mastoiditis which some eight men, including the family physician, had examined and were sure it was not mastoiditis. When I first saw the child I was not sure what it was, although I thought there was a probability of antrum trouble. There was at first slight swelling over the mastoid which subsided quickly; there was no temperature. The patient seemed perfectly comfortable. Soon a swelling made its appearance over the malar process. My advice was for operation at once. I advised this on account of the swelling under the eye coming, disappearing and reappearing. I could not determine whether the mastoid process was tender or not. I was not willing to make a positive diagnosis and advised a radiograph. Later the child was taken to New York, where it was pronounced mastoiditis. It had none of the typical symptoms and the swelling so far forward was peculiar.

I have had three cases this year of double mastoiditis; one proved to be a pure stapholococcus infection, the other two streptococcus. Some years ago I had a bad case of infection beginning as a primary tonsillitis, then acute appendicitis. I was called in one day to see the case and two days later mastoiditis developed, which had to be operated on. Meningitis developed, then erysipelas and abscess of the groin, with a large discharge of pus. There was also an abscess in the arm. The pus showed streptococcus. Still later he came down with empyema of the antrum. The class of cases I have seen last winter have been mostly mastoiditis without discharge from the ear. The anterior portion of the membranae tympani was perfectly flat, while on the posterior portion there was tremendous bulging. The infection was mostly streptococcus, one case was pneumococcus; this patient had a deflected septum which obstructed the nares. He was in the habit of sitting in an upholstered chair and no doubt infected it, for the daughter lounged in the same chair and came down with the same trouble. It went from father to daughter.

H. D. Schenck: I saw three or four cases at the hospital in Brooklyn of the peculiar kind that Dr. Dowling has mentioned. The swelling was anterior to the auricle and there was no discharge from the ear. It was thought that the infection came through the bone.

G. W. Mackenzie: We all witness epidemics of mastoiditis and each epidemic will be found to be associated with pyogenic organisms. Sometimes a single organism will be responsible for an epidemic and be found in every case during that epidemic. During a streptococcus epidemic we do not get the other kinds. Dr. Rice hit a keynote when he said we all have bacterial organisms in our throats and for most of the time they are harmless; but at certain times one variety becomes suddenly virulent and then we are made sick. Most of our cases this spring were of streptococcic origin. The course of the disease and the manifestations presented by the patients depend upon what particular organism is doing the mischief and the virulence of it. Its activity is modified by the patient's powers of resistance. If the patient is fairly robust and if his previous condition has been vigorous he is likely to react promptly and to have violent symptoms and respond favorably to treatment. It is a sthenic case. On the other hand, where the patient has been in poor health and his previous condition feeble, the mastoiditis will creep on without many signs or symptoms. These are the ones that cause a great deal of concern. If a child looks sick and yet has little fever, the doctor is uncertain, and the specialist is uncertain. With such a patient everything moves slowly. It is an asthenic case. The worst cases I have seen have been those chronic cases in anemic patients. My best results have been with vaccines. I generally begin with mixed stock vaccine and follow it in two or three days with autogenous vaccine. The most prompt action of the vaccines I find in the virulent cases. Children in an impoverished condition react the least satisfactorily with vaccines.

Harry S. Weaver: I heard Dr. Dowling's remarks and remember a case very similar to his. The anterior portion of the drum membrane was normal, while the posterior was much bulged. While at the hospital one evening I received a call; it was about nine o'clock. I went down to the patient's house. The posterior portion of the membrane was bulging perceptibly and there was high fever and pain. I punctured the membrane immediately. The next day the temperature was reduced to 101°. I had him removed to the hospital and found that it was a pure streptococcus infection. There was a very excellent vaccine in the hospital made from one of these pure streptococcus cases and I used that. The temperature soon went down to normal

He had a very sick look previous to the first injection. He was septic through and through. I was tempted to open the mastoid, but after the injection there was a sudden cessation of the pain and a normal temperature. Two days later we thought that it would be well to give another injection of ten million; almost immediately after he developed an excruciating pain in the ears. He got better. Five days later we gave him a three million injection with the same result. The pain in the mastoid was aggravated by each injection. He made a beautiful recovery and is perfectly well today.

G. J. Alexander: These cases are particularly interesting to me, inasmuch as I have a patient at the present time who has developed similar conditions. The posterior superior quadrant of the drum membrane was distinctly swollen. After several days deliberation I decided to operate on the mastoid. I found no pus in the mastoid bone or cells, but there was a very peculiar softening of the bone forming the walls of the antrum. There was stenosis of the external canal.

J. Ivimey Dowling: What is Dr. Palen's rule about waiting? After the ear has begun to discharge, how long does he wait before operating, one week or two weeks, or longer?

Gilbert Palen: I endeavored to bring out in the paper that this special epidemic was peculiar in its features and especially virulent. There are two factors in every case that determine its course—the virulence of the organism and the condition of the patient. Most of the cases were long chain streptococcus; two of them were the short chain and they were nearly as severe as the other.

Oedema may occur at any point where there are inflamed mastoid cells or extension of these. Dr. Dowling's case was probably one in which there were zygomatic cells, the inflammation in these evidencing itself by oedema in that region, just as we find it over the antrum or tip in other cases. Among my collection of anatomical specimens I have a number showing marked development of the zygomatic cells, extending in some instances into the zygoma. I recall one case of brain abscess where the infection had taken place through the inner wall of a zygomatic cell.

As to how long to wait before operating? When I am satisfied from the clinical course of any case that a mastoiditis is present and energetic local treatment does not lessen the subjective or objective

signs, I should not feel safe in waiting more than twenty-four hours. Many such cases might recover without operating and a certain percentage would develop intracranial complications. The direction pus will take depends upon the anatomical structure and the resistance of the mastoid walls. Until we have some positive way of determining these, we are not guaranteed in advising waiting, for the mastoid operation properly performed will clear up the condition.

Trachoma and copper. In the copper mining section of Polk County, Tenn., and Fauniss County, Ga., Dr. Charles A. Bailey, of the United States Public Health Service (reported September 18th), examined several hundred persons without finding any trachoma. It is very common in other parts of the South.

Hahnemann ("Chronic Diseases") notes, among the symptoms of *cuprum metallicum*: The orbits are painful , as if bruised, on turning the eyes.

Pressive pain in both eyes, as if there had been no rest at night.

Pressure on the eyelids, as well with open as with closed eyes—worse when touched.

Itching in the eyeballs.

Severe itching in the eyes worse toward evening.

Burning pressive pain in the eyes.

Burning pain as from a sore, now in one eye, then in the other.

Dim eyes; they tend to close from lassitude.

Obscuration of sight.—*Hom. Recorder*, October 15, 1914.

THE TREATMENT OF ACUTE MASTOID ABSCESS FROM THE ETIOLOGIC STANDPOINT

By George W. Mackenzie, M. D.,

Philadelphia, Pa.

FROM the Etiologic Standpoint" appears to be quite superfluous in the title of my paper, and indeed it would be if it were not for the fact that physicians generally and specialists particularly are too prone to treat their cases of acute mastoiditis as though it were a purely local condition having a spontaneous origin in the mastoid. The only consistent treatment is that which comprehends not only the local condition in the mastoid, but, too, every factor, local or general, that has operated in the past to bring about the present condition or that is operating at present to prevent spontaneous recovery.

Among the etiologic factors we may include, first, the general, and by general we mean any aberration of health which contributes toward the patient's susceptibility and vulnerability to the particular infection. Furthermore, we may include the additional strain put upon the patient's power of repair by this recent infection. Treatment to be consistent must reckon therefore with these factors, after a manner fitted to the needs and circumstances of the case. For instance, if a urinary examination shows the patient to be a diabetic, we realize that the infection is or will be a severe one, associated with pronounced and rapid local destruction, when the treatment should be directed toward the diabetes as well as toward the local condition in the mastoid. In another case a child who is puny may be found upon careful examination to be tuberculous and in this case we realize, because of the tuberculosis, that the child's power of repair is correspondingly weakened. The treatment should include plenty of rest, fresh air and sunshine, together with forced feeding judiciously selected. Again we have a case where the patient's previous condition of health has been decidedly below par, the result of several acute illnessess following one after another in rapid succession. This patient should be treated somewhat after the manner of the last mentioned. There

are other cases of puny children found among the poor who are so simply because they are underfed and neglected. A stay in the hospital with general treatment often works wonders in these little folk. In still other cases among older individuals there may exist an old or recent nephritis with faulty urea elimination, where response to treatment of the mastoid may follow only after the kidneys have received first attention. In summing up we would emphasize the importance of studying our cases of mastoiditis from every angle, and where a fault is found, no matter how distant, attention should be directed toward it along with what local treatment may be necessary and indicated.

Among the etiologic factors that may be classed with the general is the patient's relative susceptibility to a particular infection in contradistinction to his immunity. Whether an individual with normal organs functionating perfectly is susceptible to an infection or not is a mooted question with our present state of ignorance. One thing we may feel sure of, that those individuals with normally functionating organs are less liable to infection and respond more favorably to treatment than those with pathologic organs.

Resistance is a term that may be applied in a general sense, while immunity is one to be applied in a particular. An individual may be immune to a particular infection, but quite susceptible to many others. Immunity acts like a particular drug in its prophylactic effects against a particular disease, just as belladonna acts as a prophylactic against scarlet fever. And this leads us to a consideration of our next factor, that of the actuating cause of the mastoid infection, the invading micro-organism.

Secondly: The pathogenic micro-organism might be one of several, among which may be mentioned the staphylococcus, streptococcus, Klebs-Loeffler bacillus, influenza bacillus, pneumococcus, tubercle bacillus, rarely the colon bacillus, typhoid bacillus, pyocyaneus, etc. Each of these bacteria is capable of producing an effect which is common to all of their class; namely, a destructive inflammation of mucous membrane associated with the formation of pus—suppuration. Hence we refer to them collectively as pyogenic micro-organisms. On the other hand, each behaves after a manner characteristically its own. For instance, the tubercle bacillus invades tissues slowly

at first and brings about the formation of tubercles which break down slowly; however, this breaking down process may become rapid at any time through the added influence of a secondary infection from one of the other micro-organisms. Tuberculosis primarily is associated with an ischemia of the parts and the amount of secretion is scant and thin as compared with the thick secretion found with the staphylococcus infection. Streptococcus mucosa capsulatus is characteristically insidious in its course. It is very progressive and does great damage without making any noise about it. The patient is stricken down with internal ear or intracranial complications without much warning from the side of the middle ear or mastoid. The secretion is characteristically sticky and of a peculiarly offensive odor. Staphylococcus is rather rapid in its course, invading the underlying bone early. It is associated with a fair quantity of creamy pus and responds quite favorably to appropriate treatment.

So we might go on portraying the characteristic clinical picture of these several infections. It is not well, however, to attempt it too far, for there is a risk of overdoing it and falling into error. By far the safer plan is to decide upon the nature of the invading micro-organism by laboratory methods. On the other hand, it is well that we post ourselves as thoroughly as possible on the behavior of the various infections, that we may be forewarned of the consequences and act in accordance with the particular infection under consideration.

In spite of what has just been said concerning the characteristic behavior of this or that micro-organism, it must not be forgotten that the strain of a certain micro-organism may not be so virulent during one epidemic as during another. Again, they may differ at different times during the same epidemic. For instance, the virulency is more pronounced during the height of an epidemic than it is earlier or later. In other words, the virulency appears to begin somewhat mildly and increases up to a certain point and then retrogrades. This fact is not new to you. At the present time we are having an epidemic of staphylococcus infection in and around Philadelphia which seems to be nearing its maximum. I do not mean to imply that we are not having at the same time our share of other infections.

As already pointed out, the intensity of the infection depends, too, upon the patient's relative resistance and immunity. I am using the

terms *resistance* and *immunity* as separate and distinct, and not as synonymous terms.

Our conclusions thus far, all other things being equal, are:

(1) The greater the *virulency* of the invading micro-organism the more intense will be the resulting infection, and vice versa.

(2) The greater the *general resistance* of the patient the less extensive will be the infection, and vice versa.

(3) The greater the *particular resistance* (immunity) the less intensive and the less extensive will be the infection, and vice versa.

Thirdly: The local factors that have contributed toward bringing about acute mastoid abscess are several. These are they which have led the way to the spreading of the infection to the mastoid. For instance, if a severe infection begins in the naso-pharynx it tends to spread to contiguous parts and progresses until the patient's organism reacts (by forming anti-bodies) sufficiently to antagonize and stop the further spreading of the infection. If, incidentally, the patient has a vulnerable adenoid it becomes involved early, increases in size and acts more or less as a direct carrier of the infection to the Eustachian tube. The Eustachian tube once invaded permits a rapid spread of the infection to the middle ear cavity, when there results an acute middle ear abscess. Although the original infection may have abated, we have in the middle ear an abscess formation which must find a vent either through the Eustachian tube or by way of a perforation of the tympanic membrane. If we can feel reasonably certain that the infection is confined to the middle ear cavity we may resort to treatment of the Eustachian tube in an effort to make it patulous. Theoretically this seems logical, but unfortunately in practice the case usually presents itself too late for this form of treatment. Our next thought should be directed toward the tympanic membrane and effectual drainage established through a free paracentesis opening.

There are cases, however, in which this form of treatment will not abort an attack of mastoid disease in the middle ear cavity and they are usually found to be the cases showing some obstructive condition in the middle ear cavity or aditus ad antrum. The obstructions referred to are adhesive bands or narrowed aditus formed by organized secretion following a previous attack of acute secretory catarrh. The mastoid abscess follows the closure of the aditus

much in the same manner as did the middle ear suppuration after closure of the Eustachian tube. If the aditus should open up promptly enough and become patulous again it is possible that the mastoid cells might drain to the middle ear cavity, and from there down the Eustachian tube and out through the perforation of the tympanic membrane early enough to abort an impending mastoid abscess. That such favorable turns for the better do occur at times in such cases no one with experience can deny. Furthermore, if administered early enough, such remedies as apis, belladonna or capsicum will accomplish the trick in a sufficient percentage of cases to warrant their use. If the case has gone beyond the stage where these remedies can be of use, the mastoid abscess should be treated surgically like any other abscess in a closed cavity. The indication for the mastoid operation and the method of procedure are not concerned in this subject and therefore will not be discussed further. If operation has been elected as the procedure to be pursued in a given case, our duty to the patient is not entirely fulfilled until we have considered every other question raised in this paper, besides many others which for the lack of time I have not mentioned. The subject has been brought to your attention because many surgeons fully capable of performing an excellent operation are too often satisfied with their surgical efforts alone and fail to recognize other factors in the treatment which might hasten recovery if not abort the process.

1831 Chestnut Street.

HOMOEOPATHIC MATERIA MEDICA AND THERAPEUTICS

Harry S. Weaver, M. D.

Philadelphia

In going over the provings of belladonna we find that each prover manifested throat symptoms, some in a severe form, others only in a mild degree.

The mucous membranes always showed the typical redness so characteristic of the remedy, and when this picture is found during illness a few doses of the remedy will produce such changes in conditions that only the most skeptical observers will fail to be convinced of the efficacy of belladonna.

The reproving of belladonna conducted by the Ophthalmological, Otological and Laryngological Society a few years ago and published in book form corroborated most of the old symptoms elicited by the earlier provers. In all these, throat manifestations of the drug were present.

Probably no drug in our materia medica is more frequently indicated and prescribed in acute throat conditions than belladonna. The symptoms, whether local, general, subjective or objective, must be observed by the physician and correctly interpreted before an accurate diagnosis of the remedy can be made. Each physician learns by his experience the potencies which give him the best results. It may be, in fact, it is, difficult for two physicians to agree upon the same potency and the same technique of administration of drugs.

One physician will use belladonna θ, 1x, 2x, 3x, putting so many drops in one-half glass of water, administering one or two teaspoonfuls every one-half, one, two or three hours, and cure his cases, and do it quickly. The other may use only the thirtieth or higher and have entirely different technique of administration and cure his cases equally well or better; so that drug administration is in a certain sense a matter of individual experience. Some of my friends use belladonna almost exclusively in the tincture and obtain beautiful results in acute throat troubles. I use mainly 2x, 3x and 30x and claim equally good results. We must not be content with prescribing belladonna or

any other remedy simply on the throat manifestations of the drug, but should look for the constitutional characteristics as well, and if this is done there will be fewer mistakes in electing the correct remedy.

The throat manifestations calling for belladonna are redness, congestion of all the mucous membranes, dryness of the mucous membranes, dry and shiny membranes, erysipelatous appearance of mucous membranes, raw and scraping feeling in the throat, constricted sensation with dryness and rawness; sensation of a lump or foreign body in the lower pharynx or œsophagus, constant desire to swallow, empty swallowing painful, great dryness of all mucous membranes, causing thirst, but water does not relieve. Any group of the above symptoms when associated with the constitutional symptoms of belladonna that are found in the sick will respond quickly to the internal administration of the drug.

It is a difficult matter to differentiate between remedies by only using the throat symptoms, but I will name a few differential points that have helped me.

Capsicum compared to belladonna. Both have the constriction of throat, sensation of lump in the throat, redness and dryness of the mucous membranes, swollen and inflamed uvula; but capsicum has the *intense peppery burn* all over the throat with the constant desire to swallow for relief of burning. Post-nasal rawness and burning when associated with *relaxation* of the *uvula* or oedema.

Guiacum. This remedy presents almost a perfect objective picture of belladonna, but lacks the constitutional disturbance always present when belladonna is indicated. They also complain of a *muscular soreness* in the *neck* with marked fatigue following speaking. When the objective symptoms all indicate belladonna and the constitutional symptoms are absent, prescribe guiacum 1x and your patient will surely improve.

Apis. Has many of the belladonna throat symptoms; but in this drug we have bright red, dry and shiny mucous membranes, with *oedema* of all the soft parts, especially the uvula and half arches and a sharp stinging pain. Occasionally single or groups of blisters filled with clear lymph and quantities of tenacious mucous, which is hard to dislodge.

Mer cor. Has redness, some burning, swelling of uvula and half

arches, but most of the pain is *post-nasal*, with *sharp pains extending* to *ears;* post-nasal swelling, mucous membrane dry, red and covered with bloody mucus; no belladonna constitutional symptoms.

Phytolacca. Right-sided sore throat, great sensitiveness even to clothing around the neck. Uvula large and oedematous, dry, rough, smarting and burning of faucial pillars, but the color is not a bright red as in belladonna, but a *dark red* or *bluish red*.

CLINICAL NOTE.

For the last three years I have used both in private and clinical practice a formula for local application in chronic and subacute suppurative otitis media with considerable success. While by no means a panacea, it has succeeded at times after I had failed with other methods. The ingredients have been used before, but so far as I know the combination is my own. The furmola is as follows:

Iodin, grains	5
Potassium iodid, grains	5
Glycerin, drams	5
Spirits Vini Recti., drams	3
Formalin (40%) drops	24

After thorough cleansing of the middle ear, irrigation of attic if indicated, the solution is churned in on a cotton-tipped applicator. The formula may be varied according to conditions present; for instance, the proportion of alcohol may be increased when granulations are present. It is understood, of course, that all pathological conditions of the Eustachian tube, naso-pharynx or accessory sinuses receive proper attention; that polyps be removed as well as other obstructions to drainage before using this formula.

I might mention that this formula has also proven useful in tubercular laryngitis, in that case the formalin being increased gradually to two drams in the ounce.

Alfred Lewy.

CURRENT LITERATURE

Archiv für klinische Chirurgie, Berlin. October CV, No. 4.

*1. Restoration or Substitution for the Oesophagus. von Hacker.

*1. Dr. von Hacker accomplished quite a "stunt" in a case of erosion of the oesophagus from lye poisoning. To make a new route he transplanted the transverse colon into the lesser curvature and brought the other end up under the skin to the clavicle where he anastomosed it with the upper end of the oesophagus. The operations extended over a period of six months, but results were satisfactory.

Medizin Klinische, Berlin, X, No. 43, October.

1. Whooping Cough Endotoxin Reaction. R. Neurath.

Hospitalstidende, Cohephagen. LXII. No. 43.

1. Convulsion in Pertussis. S. T. Sorensen.

Deutsche medizinische Wochenschrift, Berlin, X, No. 44.

1. Injury of the Ears at the Front. E. P. Friedrich.

Archives of Internal Medicine. November, 1914.

*1. Epidemic of Streptococcus Sore Throat in Jacksonville, Ill., Traced to Milk of Cows Affected with Streptococcus Mastitis. J. A. Capps and D. J. Davis.

*1. A marked exudate complicated by glandular swelling was the manifestation of this cattle disease in humans. Three hundred and forty-eight cases were investigated and the source of the contagion traced to one dairy. The farms in the neighborhood were inspected and eleven cows were found with "garget." Haemolytic streptococci appeared in the milk of two of these cows; this milk had been sent to the suspected dairy from which those who had contracted the disease received their supply.

Medical Record. November 21, 1914.

1. Association of Follicular Tonsillitis with Acute Gastric Fever. S. Fischer.

Oklahoma State Medical Association Journal. November, 1914.

1. Suppurative Otitis Media. S. A. Newton.

2. Suppurative Otitis Media. J. B. Ferguson.

3. Plea for Early Intubation by General Practitioner. A. P. Gearhart.

4. Pharyngeal Diagnosis from a General Practitioner's Standpoint. W. E. Nixon.

Practitioner. London, November, 1914.

1. Diagnosis of Nasal Accessory Sinus Disease. W. S. Syme.
2. Rhino Sporidium Kinealyi. T. S. Tirumurti.

Journal American Medical Association, December 5, 1914.

*1. Preventative Otolaryngology. B. R. Shurly.

*1. Dr. Shurly's address as chairman of the section of the A. M. A. is interesting in its sounding of some valuable conservative notes. He warns of the abuses that an enthusiastic surgical fervor brings. "We are suffering mentally, physically and financially from too many medical societies, too many new instruments and too many surgical operations with the name of the surgeon as the distinguishing pennant of the operation." His plea is for a deeper study than the mere mechanical, and he sees for the future in the role of a national public health bureau the development of preventative medicine to a high plane.

The Journal of the American Medical Association. December 12, 1914.

1. Clinical Classification of Ethmoiditis. E. M. Holmes.
2. Pathology of the Ethmoid Labyrinth. G. E. Shambaugh.
3. A Tack in the Eparterial Bronchus. Wm. Lerche.

The Journal of the American Medical Association. December 19, 1914.

1. Papilloma of the Larynx. Harmon Smith.

*2. Sonorous Vibrations in the Treatment of Ear Diseases. S. M. Hubby.

*2. Those who attended our section meeting at Atlantic City will remember the discussion on the effects of the "noise" treatment of chronic ear conditions, and will be satisfied if they will read this thorough review of the matter. The article is based on an extensive experience and cites numerous cases fully. Results reported by Dr. Hubby show that good effects can be obtained with carfulness and discrimination.

The Journal of the American Medical Association. December 26, 1914.

An excellent index medicus, general in scope but very complete, appears in this issue. The index covers original articles in the principal medical periodicals of this and other countries, with the one inconvenience, however, that the reference to other journals is indirect, the reader being referred to the volume and page of the *Jour. A. M. A.* where the given article is mentioned.

This "index," with that of the index medicus, the index and reviews in the *Journal of Surgery, Gynecology and Obstetrics*, and Beck's index

(nose and throat) makes the whole field of medical literature readily accessible, with much saving of time and thorough satisfaction. Our generation should be fully thankful for the opportunity such an index gives us.

The plan that the Journal has adopted covers both articles and authors.

New York State Journal of Medicine. November, 1914.

1. Correction of Nasal Deformities by Mechanical Replacement of Transplantation of Bone. W. W. Carter.
2. Recent Developments in Otology. T. J. Harris.

Lancet. November 7, 1914.

1. Intracranial Administration of Chloroform. W. D. Mart.
2. Ether Anaesthesia by Intracranial Method; Report of Forty-nine Cases. R. L. Jones.

North American Journal of Homocopathy. October, 1914.

1. Nasal Obstruction and its Sequelae. H. L. Clarke.

New York Medical Journal. December 5, 1914.

1. Tonsillotomy vs. Tonsillectomy. T. R. French.

Laryngoscope. October, 1914.

1. Deaf Child—Plea for Co-operation. M. A. Goldstein.
2. Anatomy of Tympanic Cavity. R. Butler.
3. Vaccine Therapy in Ear Disease. V. Dabney.
4. Tuberculosis of the Parotid Gland. T. E. Carmody.
5. Affections of Lingual Tonsil and their Treatment. C. C. Biedert.
6. An Uncommon Case of Nasal Hemorrhage. J. A. Thompson.

Laryngoscope. November, 1914.

*1. Preturbinal Operation on the Maxillary Sinus. R. H. Skillern.
2. Extracts and Thoughts from a Sinus Classic. J. J. Hurley.
3. The Relation of the Tonsil to Thyroid Disease. B. R. Shurly.
4. Suspension Laryngoscopy in Children. Robert Levy.
5. Routine Use of the Bronchoscope in the Out-patient Department. R. F. Ridpath.
6. The Environmental Surgery of Oto-Laryngoscopy. J. F. Barnhill.

*7. Hyoscin and Morphin as a Preliminary to Local Anaesthetics. L. M. Hurd.

*1. In 1908 at the meeting of the American Medical Association in Chicago, Canfield described his new method of opening into the maxillary sinus by a small incision in front of the inferior turbinate on the lateral nasal wall. "Sturmann, in 1910, brought out a similar operation, but without the submucous resection. His idea was to make an intranasal Denker operation; that is, the incision being made in the nose instead of the mouth." Dr. Skillern has built upon the work of these two predecessors and has devised a simpler operation that can be epitomized by describing it as the removal of a vertical elliptical area of nasal mucosa anterior to the inferior turbinate. The bony anterior internal angle of the antrum is taken away with a drill and punch. The whole sinus is laid bare for inspection, curettage, drainage and treatment.

*7. Dr. Hurd, in his article on the use of narcotics preparatory to operations under local anaesthesia, carries out well the ideas of Crile as applied to our branch. We are apt to overlook the nervous strain to which a patient is subjected by the thought of and during the performance of an operation. Crile's methods and other ingenious means will do much to avoid the nervous exhaustion that is seen in the operative after-effects. Hurd uses hyoscin and morphin, giving it about an hour before the operation and awaiting its effects. He tries to obtain a state of a "happy, dreamy doze," and mentions occasional delirium and too deep narcosis. With these drugs he uses the local anaesthesia produced by alypin in preference to cocain, objecting to the latter's exhilarating and secondary depressing effects. He prefers his methods of narcosis and local anaesthesia to general anaesthesia and finds that in grave operations shock is usually avoided. He mentions the variability of the personal factor in the effects of hypnotics.

New Editions and a New Book. The fifth edition of Kyle's work has just been issued; a hundred pages have been added and some forty new illustrations. The chapter on voice and speech defects is a most welcome addition to the general book on nose and throat.

The third edition of Gleason's Nose, Throat and Ear appears—the chapter on local anaesthesia is very desirable.

de Schweinitz is out in a seventh edition; Barnhill and Wales' Otology in its second; Ballenger's fourth edition; Coakley's fifth edition; Wright's History of Laryngology is still fresh, and a new general text-book appears from the hands of Wright and Harmon Smith. The latter book is well illustrated and remarkably accessible in all its features for ready reference.

Douglas A. MacFarlan.

Royal London Hospital Reports. November, 1914.

*17. John Cunningham Saunders (with portrait).

18. Color-blindness. A pedigree, including two females. The late

E. Nettleship.

*19. Inflammation of the Uveal Tract Secondary to Infection of Mucous Membranes. Charles Goulden.

*20. The Influence of Lateral Illumination on Visual Acuity. J. Herbert Parsons.

21. Two congenital abnormalities in the dog. (a) Congenital central cataract in two fox terriers belonging to one litter, and (b) bilateral failure in the separation of the pupillary membrane from the cornea, and partial albinism, in a bull terrier. George Coats.

22. Some Cases of Deep Inflammatory Deposits in the Choroid (illustrated). Malcolm L. Hepburn.

23. Melanoma of the choroid, four cases, with one pathological examination; and one case of unusual chronicity, after dissemination of a melanotic sarcoma had occurred (illustrated). R. Foster Moore (Lang Research Scholar).

24. Two unusual forms of congenital abnormality, reported pathologically (illustrated): (a) Displacement of the lens with corectopia; (b) corneal dermoid associated with congenital anterior staphyloma. R. Affleck Greeves.

*17. John Cunningham Saunders, 1773-1810, founded Moorfield's Hospital in 1805. He was the first London surgeon to insist on the advantages of and to practice consistently the discission of congenital cataracts in young children, and seems to have been the first to recognize the special applicability in children of Conradi's method (1797) of doing this through the cornea.

He was the first person to practice and recommend instilling extract of belladonna before needling a cataract to dilate the pupil and avoid injuring the iris. Middlemore considers him the first to point out correctly and decisively the conversion of the lenticular into the capsular form of cataract, tracing the changes "in a very clear and perspicuous manner."

*19. A suggestive study, based on 6,835 patients, 45 pages with over three pages of bibliography.

In 37 cases of *iritis* gonorrhea was the cause of or coincident with 16, syphilis of 19, and tuberculosis of 2.

Of 142 cases of *iridocyclitis,* from or with septic teeth 64, congenital syphilis 52, "sympathetic" 3, gastro-enteritis 3, mucous colitis 2, tonsillitis 2, atrophic rhinitis 2, gastric ulcer 1, influenza 1, endometritis 1, bronchitis 1 and no cause found 10.

Choroiditis. (a) Disseminated 9, from or with acquired syphilis 3, congenital syphilis 5, septic teeth 1. (b) Exudative, a patch, with punctate keratitis 4; from or with septic teeth 2, purulent rhinitis 1, appenditicis 1. (c) Massive choroiditis 1, from 1 purulent rhinitis. "The occurrence of an infection of a mucous membrane and an inflammation of the uvea in so large a proportion of cases is at least suggestive, and in many cases the effect of treatment of the mucous membrane upon the condition of the eye has been so beneficial that

the connection can scarcely be denied; nevertheless, there are but few cases in which the organism causing the disease of the mucous mmbrane has been found within the eye, and investigations in this direction have been extremely disappointing. There is now, however, complete proof in the case of gonorrhea, and the typhoid bacillus has been cultivated from the eye of a patient who had an iridocyclitis following typhoid fever."

"After iridocyclitis the next most common cases of uveitis that can be ascribed to mucous membrane infection are those in which a single more or less large patch of choroiditis appears accompanied by deposits on the back of the cornea." Iridocyclitis, which is apt to recur, may be recognized only by progressive loss of sight and the discovery of posterior synechiae; in the more severe cases there is injection of the conjunctival and ciliary vessels, deposits upon the back of the cornea and opacities in the vitreous. Corneal opacities may obscure these latter. Some cases set in with increase of tension. As time goes on more posterior synechiae are formed, membranes appear in the pupil and, later, cataract. "In the most serious cases the eye becomes soft; it is these that are so hopeless, and end in total blindness."

There is reason to believe that iridocyclitis is much more common during influenza epidemics than at other times.

Dr. Goulden's conclusions are that—

1. It is most likely that many cases of uveitis, other than those due to syphilis and tuberculosis, are due to infection from a diseased mucous membrane.

2. Oral sepsis is the most common cause of uveitis.

3. The proof is complete in the case of gonorrhea and typhoid fever—bacterial infection of the eye in the course of these diseases has been demonstrated.

4. The finding in a patch of choroiditis of cocci staining like pneumococci make it almost certain that pneumonia may be a cause of uveitis.

5. Whenever the cause of a case of uveitis is not obvious every mucous membrane should be examined by inspection and bacteriologically when possible; when this is done the majority of such cases of uveitis will furnish at least one mucous membrane as the seat of infection.

6. Cases of gonorrhea of the deep urethra if not completely cured may be a source of very serious danger even after many years of apparent immunity.

7. The type of uveitis consisting of a solitary patch of exudate into the choroid with vitreous opacities and keratitis punctata "is always secondary to a source of septic infection in some other part of the body, and that source is uuaslly a mecous membrane."

*20. The influence of lateral illumination of the eye on visual acuity is one of considerable practical importance. Discrimination of stimuli depends upon differences rather than upon absolute values. Weber's law is that "the just appreciable increase of stimulus bears a constant ratio to the original stimulus." For white light von Helmholtz could distinguish 1/167 of the light intensity.

Owing to oblique incidence of lateral light the media of the eye are flooded with light, partly transmitted through the sclera as well as through the refractive media, partly reflected from the various refracting surfaces, and thus unequally distributed.

Investigations since 1883 by various observers are summarized. Cobb's 1911 papers "are the best that have yet appeared;" they conclude: that

1. Light from a bright source entering the eye reduces the visibility of an object, the more the brighter the source, the lower the brightness of the object the

smaller the angle subtended by the two, except that when the test object is very bright lateral illumination may cause increased visual acuity.

2. Under the worst practical condition for reading—the light at 10° from the visual axis, equal illumination of the eye and test object (black letters on white ground)—the reduction in visual acuity is negligible at any intensity of illumination.

3. The retinal image of the light source is a negligible factor in the depression of vision, at least for angles of 15° and over, since, other conditions being equal, it is indifferent whether the image falls on the blind spot or on sensitive portions of the retina.

4. The depression of vision is due to light which, by reason of reflection or diffusion, partly from imperfect transparency of the media, is scattered over the retina upon and near the image of the object.

5. Visual acuity behaves in general, but not wholly, the same with (a) illumination of the eye from a lateral source, and (b) a haze of light thrown over the rod free central retina (subtending 2° in the visual field) with proportional variations in the light flux in the two cases.

6. The disagreement between the two sets of results just mentioned must be due to changes in the sensibility of the part of the retina concerned in vision of the object, induced by the scattered light in the case of lateral illumination, falling on the retina not on but about that part, and probably not further away from it than 15° measured in the visual field (the remoteness of the blind spot).

7. There is no parallelism between the depression of vision for detail on the one hand and discomfort and other visual disturbances classed under the head of "glare" on the other hand, resulting from a light source in the field of vision.

In 1913-14 he made even better experiments. He found that different individuals may show fairly wide differences in their vision of objects of very low brightness, both with and without bright surroundings. In spite of such individual differences, for objects of relatively low brightness the presence of a surrounding field of relative high brightness has the effect of lowering the capacity of vision both for detail and for brightness difference. When the surrounding field was slightly brighter than the test object discrimination was found to be actually better both as regards visual acuity and brightness difference than for a physically identical object seen in dark surroundings. Surroundings of a brightness about equal to or less than that of the test object show no consistently better or worse results than dark surroundings with the identical test object.

Visual acuity, therefore, varies less under the influence of contrast than does differential sensibility, because the retinal image is always equally perfect. As contrasted with visual acuity, differential sensibility depends mainly upon retinal conditions and to a very minor degree upon perfect retinal images. The essential difference is that in visual acuity estimation the brightness difference of the parts of the test object is gross, while the areas involved are minimal. But in differential sensibility by simultaneous presentation (comparing the two halves) the areas of the fields compared are gross, while the brightness differential is minimal. Hence, small irregularities in the retinal image have comparatively little effect. Spatial induction (produced by altering the surroundings) was found to be far more significant for differential sensibility than for visual acuity. J. L. M.

Two cases of sphenoidal disease with symptoms simulating brain abscess. A. R. Solenberger, Colo. Med., September, 1914.

The cases are typical but interesting. The first proved to have a dense anterior sphenoidal wall, three-fourths inch thick, blocking up the whole posterior nares on the left side. The sphenoid alone was involved, the condition being a chronic purulent one with no necrosis.

The second case was a fulminating one with typical brain abscess symptoms. It developed from a long standing atrophic rhinitis; marked necrosis was found within the sphenoid. Both cases cleared up with drainage.

D. H. Ballon in "Recent Investigations on the Semi-circular Canals and their Clinical Applications," Can. Med., October, 1914, gives the best review of the subject that has yet been seen. The paper is not suitable to abstract, but should be left for a complete digestion in toto.

Atrophic Rhinitis With Ozena—Etiology and Surgical Treatment. H. L. Harris, Ohio State M. J., October, 1914.

Dr. Harris strikes a novel note and gives us still another cause for atrophic rhinitis. In short, he describes it as the end result of the constant presence of pus in the nasal pockets. He expands his idea plausibly and advocates for relief or cure Ballenger's fadical removal of middle turbinates and ethmoids en mass.

Removal of two nails from the Bronchi, N. Y. Med., August 22, 1914.—F. H. Good.

O. A. Lothrop in the Boston Med. & Surg. Journal, August 20, 1914, gives an excellent illustrated case of correcting a bad nasal deformity with a section of the scapula. The result is most creditable.

Dan'l W. Layman, J. of Ind. State Med. Assn., September 15, 1914, reviews the subject of bronchoscopy, laryncoscopy and esophagoscopy. The article is full and very readable, but general.

"The Shinck Reaction and Its Practical Application," in an article in Arch. of Pediat. XXXI No. 7, is handled by one of the best authorities on diphtheria in this country. The testing of humans by a skin reaction to diphtheria toxin has a distinctly practical application in the determination of immunity and in the establishment of prophylaxis. The technique is analagous to the Von Pirquet, except that the toxin is administered subcutaneously.

Douglas MacFarlan.

SOCIETIES

MINUTES OF THE DECEMBER MEETING OF THE PHILADELPHIA EYE, EAR, NOSE AND THROAT SOCIETY

THE Eye, Ear, Nose and Throat Society of Philadelphia held its regular meeting on Monday evening, December 14th, at 7 P. M.

President Dr. H. S. Weaver in the chair.

The scientific program consisted of a paper upon "Alcohol Injections of the Superior Laryngeal Nerve for the Relief of Pain in Tuberculosis of the Larynx," by Dr. Fredk. Warren Smith.

Discussion of Dr. Smith's paper.

Dr. Mackenzie asked if Dr. Smith had had any failures in the use of alcohol injections for the relief of pain in these cases.

Dr. Smith replied that he had had no complete failures, but some cases in which the period of relief was not of long duration.

Dr. Wessels asked if Dr. Smith had ever passed the injecting needle through the thyro-hyroid membrane into the larynx, and if so whether there were any alarming symptoms following.

Dr. Smith replied that in his practice this had not occurred; should such a penetration occur the alcohol injected into the larynx would cause severe coughing.

Dr. Mackenzie asked if the injection was followed by any visible infiltration of the tissues from the nerve.

Dr. Smith replied that this had occurred at times. He further stated that in cases of laryngeal tuberculosis there is usually a mixed infection, and the work in Mayo's Clinic demonstrating the beneficial effect of large amounts of saline solution in combating these infections had tempted him to try the injection of large amounts of this solution.

Dr. Mackenzie asked if Dr. Smith had encountered any cases of foreign bodies getting into the larynx as a result of the anaesthesia produced by the injection. Also if he had encountered any sloughing of the tissues following the injection.

Dr. Smith replied that none of his injected cases had ever gotten

a foreign body in the larynx, nor had he seen any sloughing.

Dr. Mackenzie asked if there were any changes in the local condition of the larynx following the injection.

Dr. Smith had not noticed any.

Dr. H. S. Weaver asked if Dr. Smith did not think that alcohol would have some curative effect upon the process. He asked this because he had seen a cure of a case of lupus of the larynx by a local application of alcohol.

Dr. Smith would not express an opinion as to whether or not alcohol would have a curative effect.

Dr. Mackenzie asked if the anaesthesia induced by the alcohol injection was sufficient to permit of operative manipulations within the larynx.

Dr. Smith stated that the anaesthesia was not sufficient for any major operative work.

Dr. Palen asked for an explanation of the occurrence of pain in the ear when the injecting needle had reached the nerve.

Dr. Smith stated that he had consulted Dr. Rufus B. Weaver for an explanation of this, but Dr. Weaver was not inclined to give a definite reason.

Dr. Clay asked Dr. Smith if he had ever employed the alcohol injections of the superior laryngeal nerve for the relief of pain in carcinoma of the larynx.

Dr. Smith stated that he had not used it in cases of carcinoma, but expressed the opinion that it would be applicable.

Joseph V. F. Clay, M. D., Secretary.

Carbon dioxid for tinnitus aurium. D. E. S. Coleman, a number of months ago, gave several doses of three No. 40 pills medicated with carboneum sulph. tincture for tinnitus aurium of several years' standing, and resulting from severe cold. Prompt results and no return to date.—*Chironian,* August, 1914.

INSTITUTIONS

NEW YORK OPHTHALMIC HOSPITAL

Mr. Editor:—

In the belief that the alumni and (other) friends of the College of the New York Ophthalmic Hospital will be interested, I am sending you an extract from a personal letter of Dr. Deady, its Dean; am sure this is no violation of confidence.

"Next year I am going to have our college go right into the ear—Mackenzie fashion. This year I am having Mackenzie himself deliver six lectures in our course, and next year Dr. Hetrick—who is a good one—will be ready to do it permanently. Also next year Ritchie, who is a *good* teacher, will do *practical* refraction for the whole winter and rub it in hard. It is hard to get these things right, but we are getting there.

"We already give lectures on the cadaver in eye, ear, nose and throat beside radiology by Dieffenbach—all a part of the regular course."

John L. Moffat.

ABSTRACTS

Report on the Recent Developments in Otology.

Dr. Harris in this review mentions (A) The use of heated bog soil by Maljutin in a series of different non-suppurative aural conditions with marked benefit. He then mentions the list. (B) Re-education of the deaf by a method brought forward by Maurice and others in Paris. It is an electric apparatus producing vibrations from 100 to 4,000 per second. Although Maurice claims excellent results, he fails to give extensive case records. (C) Under the title, Otosclerosis, he mentions the work of Manasse, Citelli, Denker and Ortloff. Otosclerosis is still an unsolved problem from the etiologic as well as therapeutic standpoint. (D) Streptococcus mucosa is pointed out as being the micro-organism responsible for the production of the most unfavorable form of middle ear suppuration, and he advises most careful bacteriologic examination of the secretions from all cases of otitic suppuration. (E) Vaccine in the treatment of suppurative affections of the middle ear is considered, but with less favor than it was formerly in a paper by Dr. Nagle presented to the American Laryng. Rhinol. and Otol. Soc. in Washington four years ago. He gives due credit to Hiss and Dwyer for their work on leucocyte extract in suppurative conditions, particularly when they are endocranial. (F) Indications for operation in labyrinthine disease. He quotes liberally from Leidler, assistant to Prof. Alexander, and endorses him especially because of his conservative attitude. (G) Under the heading Brain Abscess he gives credit to Kopetsky and Haines for their advanced studies on the subject. He mentions, too, the work of Day in the treatment of meningitis. He also refers to the classification of meningitis after Alexander, on page 527.

(a) Meningitis with uncomplicated acute purulent otitis.
(b) Meningitis with complicated chronic purulent otitis..
(c) Meningitis with otitic brain abscess.
(b) Meningitis with complicated acute purulent otitis.
(e) Meningitis with purulent labyrinthitis.

He refers to the work of Preysing, Uffenorde and Brieger. Under the heading, Method of Applying Test, he makes mention of

the caloric test of the internal ear and refers to it from the clinical aspect. The article is instructive and well written and should be read in detail to appreciate it fully.—Thomas J. Harris, N. Y. State Jour. of Medicine, November, 1914.

Surgical Experiences With Pituitary Disorders.

The author makes mention of Marie's syndrome of acromegaly and Frohlich's dystrophia adiposa genitalis. He then calls attention to the fact that "in the ordinary walks of life beyond hospital walls, outspoken examples, not only of acromegaly, but of the more newly appreciated syndrome of hypophysial insufficiency, are encountered sufficiently often to make us realize that a pronounced constitutional evidence of dyspituitarism in one direction or the other need not be incompatible with a reasonably comfortable and effective life or cause the victim to seek medical advice on the score of physical incapacitation."

Furthermore, he claims that "for the most of us today manifestations of tumor continue to be a neccssary guide-post, so that those who venture to predict pituitary disease in their absence do so with misgivings and merely on the ground that similar constitutional symptoms have been known to arise in conjunction with a growth.

"With all this stress upon the tumor and its local manifestations we must not overlook the fact that the constitutional indications of pituitary disease may bear little relation to the size of the lesion, for outspoken acromegaly may occur with but little enlargement of the gland, and the counterposed secretory state may accompany a primary glandular hypoplasia, so that tumor may not enter into the question at all. Conversely, a surprisingly large tumor producing extreme distortion of the structures of the interpeduncular space may give insignificant and hardly appreciable clinical evidence of its presence."

He accepts the prevalent view that derangement of any one of these correlated (ductless) glands leads to more or less evident disturbances in other members of the series. In referring to pars anterior he cites the feeding experiments of Goetsch to show there is an excitatory effect on the reproductive organs reflected on the secondary characters of sex. He refers to the association of hibernation in animals to a diminished functional activity of the posterior lobe of the pituitary gland. He believes that hyperpituitarism tends eventually

to change to hypopituitarism; he grants, however, that some cases appear to be hypopituitarism from the outset. He refers to the possible association of change in the hypophysis to diabetic insipidus, states of undue drowsiness, disturbances in the sexual sphere, and delayed or precocious puberty. Upon analysis of the 148 cases which he has studied he showed the characteristic skeletal metamorphosis of acromegaly, while ninety-four showed the reverse picture, that of glandular insufficiency. In the remaining cases there was obvious polyglandular involvement, including the other ductless glands in which the hypophysis participated.

In referring to perimetric deviations he says: "The tumors or glandular stromas which accompany pituitary disease enlarge slowly, and symptoms may often be traced back for many years. Though as a rule the optic chiasm is the first of the neighborhood structures to suffer, it is extraordinary what a degree of stretching and displacement it is susceptible of without affecting the acuity of vision or causing any disturbance in the fields. The characteristic chromophobe stroma originating in the gland itself may distend the sella to the point of absorption of its walls and stretch the glandular capsule until it gives way, permitting the enlarged gland to grow upward into the cranial chamber. Such an intracranial extension may occur to one side of or behind the chiasmal cross-roads, so that eventually either a homonymous or a bilateral defect in the fields of vision may be made out; but manifestations of pressure against the uncus, or against the crura, or even the frontal lobe, may give evidence of extensive intracranial invasion long before there are appreciable signs of chiasmal distortion.

"Nevertheless, of all the local symptoms, evidences of pressure on the chiasm are of course the most characteristic and definite. Special studies of these chiasmal disturbances have been made with my co-worker, Clifford B. Walker. * * * It will suffice to say here that in the majority of the cases in which the perimetric changes have been present, the defects in the field of vision occurred in the upper quadrants, whether bitemporally or homoymously, indicating pressure against the chiasm from below. We have seen fit to speak of these field defects as grades or stages of hemianopsia, for true half vision, particularly when it affects both eyes symmetrically, is not only

comparatively rare, but shows a seriously advanced stage of the process. In the earliest stage, which unhappily is not often recognized, there is merely a slanting off of the form field possibly in one eye alone, with a more or less definite quadrantal loss for colors and often a relative paracentral scotoma—to which de Schweinitz in an excellent paper on the subject has called attention. From the early defect of this stage 1, the process advances in characteristic fashion through what we call stage 2 of typical hemianopsia to stage 3, in which blindness ensues. Moreover, on relief from pressure the process retraces its steps occasionally with great rapidity—a matter of days oftentimes—until the fields are again normal, or as near normal as the stage of the advance will have permitted."

He refers to the operation by the transphenoidal route, illustrating the technique with ten figures.—Harvey Cushing, Jour. A. M. A., October 31. (Ed.)

Melanosarcoma of the choroid. Mrs. M. H. H., aged 49, married, first seen April 25, 1912. Noticed slight blur over right eye week ago; covered the left eye and was very much surprised to find the sight of the right very defective. Has been subject to neuralgia and hay fever. During these attacks the right eye was slightly more susceptible than the left, otherwise patient considered herself in good health.

Right eye conjunctival veins were very much enlarged on the lower side, Tn. pupil action normal. Nerve slightly hazy, but not raised about the surrounding retina. Retinal detachment was visible. Under full mydryasis there was evident in the lower pupillary area a dark mass. No details could be made out, but posterior to this with a +10 the detached retina could be seen not as much raised as the rounded black mass. Color was pink, except white streaks along the vessel walls. Transillumination gave a dark arc below equal to about 1/3 of the circumference. Vision was about 3/200 raised with a +5. spherical to .1. Left eye was also hyperopic, having normal vision with +6. spherical. In the left retina were two cream colored spots resembling an exudative chorioiditis; otherwise normal. Systolic blood pressure 160. Diagnosis, malignant tumor; enucleation advised.

Examination of breasts, nose and sinuses revealed no involvement. Three blood examinations were made and a urinalysis.

May 10, 1912, the right eye was enucleated and the pathologist diagnosed melanotic sarcoma. There was never any sign of recurrence in the orbit. The patient remained well until November, 1913, when she had symptoms in the vicinity of the gall-bladder—except that during that summer she had "trouble with her liver.' In December she complained of distress in the epigastrium, and a globular tumor developed with amazing rapidity, as did the enlarged lobe of the liver in the flank, soon developing edema and jaundice; death ensued on January 11, 1914.—David W. Wells, *Ophthalmology*, July, 1914.

J. L. M.

Alcohol injections in tuberculosis of the larynx. Bucher and Chamberlin report all the cases in which injection of the superior laryngeal nerve with alcohol was resorted to during a period of eleven months of sanatorium practice. The increased ease with which food could be taken was so marked that it must rank in importance with the relief of the pain.

The technic of the operation is simple and is as follows: Place the patient in a horizontal position. The left side of the larynx is grasped with the first and second fingers of the right hand and with the thumb of the same hand the painful spot is located. As soon as this spot is found, the thumb-nail is pressed in to mark the spot and the needle is introduced at this point. The painful spot is the point where the internal branch of the superior laryngeal nerve pierces the thyrohyoid membrane. It is situated at about the middle point of the superior border of the thyroid cartilage. The needle is introduced perpendicularly to the surface of the skin for a distance of 1.5 cm., which distance has been marked off on the needle. According to the thinness of the subcutaneous layer of fat the perforation has to be more or less deep The point of the needle is now moved carefully in all directions until a sharp pain radiating to the ear is felt.

Sufficient warm 85 per cent alcohol is slowly injected until the pain in the ear disappears. During the operation the patient has to avoid both speaking and swallowing. The needle is then withdrawn and the process is repeated on the other side. No local anesthetic is required. A few minutes after the operation the patients complain of very little discomfort. In case the nerve has not been reached the

discomfort is increased, but the pain on swallowing is markedly diminished.

The ease with which this form of treatment is employed, and the marked relief which it affords in suitable cases, renders it one of the most gratifying agents at their command to relieve the pain of the tuberculosis.—*Interstate Medical Journal,* April, 1914. J. L. M.

Enucleation of tonsils with the fingers. E. Borchers claims simplicity, rapidity, slight hemorrhage and impossibility of injury as advantages of his method.

He uses and recommends ethyl chloride as anæsthetic, with the drop method. He operates during the primary stage, which is quickly reached. The reflexes should be present to avoid aspiration of the blood. The head is elevated and drawn to one side. The anterior pillar is detached by a curved elevator. If adhesions are present, curved scissors and forceps are necessary. After detachment of the anterior pillar, the enucleation of the tonsil from its bed is performed by the index finger. This is done by stripping it up and down. A few seconds usually suffice to finish the procedure, so that the tonsil is held by a thin pedicle passing in the direction of the base of the tongue. This pedicle may be torn off in children; in adults detachment by scissors is advisable. The operation can be done by touch alone; eye control is not neecssary. The patient is aroused and made to rinse his mouth before the second tonsil is removed.—*Münich Med. Wochensch,* Bd. lix, 1912. J. L. M.

The role of eye-strain in general practice. Cobbledick discusses the association of eye-strain with certain nervous diseases. The types of eye-strain headaches are frontal and supra-orbital, frontal and occipital combined, occipital alone, and bitemporal. The vertical headache of the neurasthenic and the intense diffuse headache of migraine are distinct from typical eye-strain headaches and sustain no close relation to such strain. Eye-strain may be an exciting cause of migraine, but there is no constant connection. The frequency of the attacks and sometimes their severity may be diminished by treatment of a refractive or muscular balance error, while in a small percentage of cases cure results. The dull headaches which migraine patients are subject to between attacks can always be cured by appropriate lenses.

Epilepsy may be cured or relieved by the use of lenses. One can quite understand a motor cortex in such a borderland state of instability as to break down with any peripheral nervous irritation, such as eye-strain, and when eye-strain is the only source of irritation one might expect relief from its correction. Even a few successes make it well worth while to investigate the refraction and muscular balance of all cases of the functional neuroses, for if cure is only occasional some measure of relief is quite common. There is a class of cases whose symptoms consist of extreme nervous irritability and change of temper, headaches, and occasionally vertigo, without other symptoms of neurasthenia; this symptom-complex is usually ascribed to functional liver derangement. These cases can be cured by attention to the refractive errors and not by purges. True neurasthenics nearly always present some symptoms of eye-strain. Accommodation is apt to be an effort for them, inasmuch as the muscles of convergence participate in the general condition of myasthenia. The vertical headache, the peculiar sensations of oppression, pulsation and band-like constrictions of the head, have no relation to eye-strain. The other types of headaches, if present, can be relieved by lenses. Eye-strain can hardly be regarded as *the* cause of *well-marked* neurasthenia, though it may operate along with other factors. It may be the main factor in slight cases of neurasthenia in which there is a good family history; these cases are cured by wearing lenses. Neurasthenia is practically always relieved by the correction of existing refractive errors. The same thing applies to such a serious class of cases as the definite melancholias, with or without suicidal tendency. In children we note dislike of near work, *i. e.*, discomfort on accommodation resulting in inattention at school. Their school reports say that such children are quick and intelligent, but inattentive and unable to concentrate attention upon their work. The correction of the eye-strain often affects such children's standing in their classes quite magically. Many of these cases are also complicated by the presence of adenoids.

Most of the functional neuroses in children are very much improved by correction of refraction errors, *e. g.*, grimaces, frequent blinking, shutting of one eye, stammering, and nervousness and irritability. Though extremely nervous and irritable children are pretty apt to have post-nasal growths.—*The Practitioner*, London. J. L. M.

Typical cerebral lesions. The author reports a series of interesting brain cases associated with more or less characteristic eye findings.

Case A, that of a young woman, age 23, as the result of a forceful effort to suppress a sneeze in church, developed a severe headache, followed by vomiting. Three days later she noticed obscuration of vision, which proved upon examination to be due to a paralysis of accommodation. The author localized the lesion in the Edinger-Westphal portion of the oculo-motor nucleus, due probably to a hemorrhage. This seems quite probable, for this is the one location where a single small lesion can cover the innervation to the two eyes.

He then cites a series of cases manifesting homonymous hemianopsia which are interesting. In the discussion he points out the importance of Wernicke's pupillary reflex sign in the differentiation of lesions anterior and posterior to the third nucleus. He cites two cases in which patients with homonymous hemianopsia on one side subsequently developed the same condition on the opposite side, leaving the macular region alone intact, with telescopic or gunbarrel vision, from which he justly claims that the cortical center for macular vision is not in the cuneus, but elsewhere. Dr. Lloyd describes a typical case of bitemporal hemianopsia from a chiasm lesion due to pressure from a pathologic pituitary body.

He cites a case with loss of upper half of field of one eye in which the Wasserman was positive. The author cites a case where the patient had been made blind and deaf from the effects of epidemic cerebro-spinal meningitis. He cites other interesting cases of crossed paralysis or hemiplegia of right external rectus and left leg. He did not mention whether the facial was affected. The paper is well written and deserves credit, and it demonstrates the importance of a knowledge of neuro-pathology to one practicing ophthalmology. To be appreciated the paper should be read in toto.—Ralph I. Lloyd, *North Amer. Jour. Homoeopathy,* December, 1914, Ed.

End results following the Yankauer operation on the Eustachian tube. In 1910 Dr. Yankauer published a report of twenty-one cases in which the bony end of the Eustachian tube had been curetted for the purpose of shutting off infection from the naso-pharynx and thereby curing chronic suppuration of the middle ear, the middle ear

structures being removed in only two cases and polypoid tissue removed only when it became necessary to allow room for operation. Most of the cases were allowed to continue the use of powder or drops. Syringing the middle ear was also a part of the middle ear treatment and granulations were touched with silver nitrate. The average time required for healing was six months, cure being obtained in sixty per cent of the patients; no mention was made of the condition of the tube at the final examination.

In a later paper, 1912, Dr. Yankauer emphasized the necessity of treating pathologic conditions of the nose and throat before a suppurative process in the middle ear could be cured, and advised the removal of sloughing ossicles and polypi. The following is a report of twenty-five cases in which the Yankauer operation was performed at the Massachusetts Charitable Eye and Ear Infirmary during 1913.

The duration of discharge had ranged from two to thirty-five years; the Roentgen ray had shown nearly all of the mastoids sclerosed, this varying in degree from a slight density to complete obliteration of the cells. In most of the patients there existed some pathologic condition of the nose or throat from which the ear trouble unquestionably had its origin.

The operation consisted of denuding the bony Eustachian tube to the isthmus. The ossicles and granulations were not disturbed and no medication was used. Postoperative treatment consisted in wiping the ear dry several times daily. Three patients complained of dizziness following the operation, one being admitted to the hospital—where the dizziness gradually subsided in two weeks.

In four of the patients the radical mastoid operation followed the curettement, two of whom had a foul discharge containing cholesteatoma crystals and showed no improvement from the operation. The remaining two developed acute mastoid symptoms two months after curetting the tube, the mastoid operation disclosing a large antrum containing cholesterin and pus.

In three other cases the tube was curetted a second time, and the remaining ossicles and outer attic wall were removed. In two cases the septum was straightened and the naso-pharynx curetted (adenoids removed). An average of eight and a half months have elapsed since the operations on the tubes; since then many of the latter have opened

and closed several times, and in several cases in which the ear had been dry there is now a profuse discharge.

Bands of adhesions anteriorly were noted in three cases; in most cases the granulations showed a tendency to shrink as the ears became dry, although the tube remained open.

Five of the cases showed slight improvement in air conduction. Recent examination of all of the cases discloses the following conditions:

Tubes with granulations and discharge	11
Tubes closed with ear discharging	1
Tubes open with ears dry	8
Tubes closed with ears dry	1

After eliminating cases of chronic suppuration in which the radical operation is necessary we have remaining a class of cases in which the former treatment has been the removal of sloughing ossicles and polypi, together with the correction of pathologic conditions of the nose and throat. Does curettage of the Eustachian tube add anything to this treatment? In my experience it is of very little value. I do not believe that it is possible to permanently close the Eustachian tube. —John L. Lougee, *Jour. A. M. A.*, October 31, 1914.

George J. Alexander.

An unusual case of screw-worms in the nose and nasal accessory sinuses. J. M., farmer, aged 66, was referred to us October 5, 1914, for hemorrhage of the nose. This patient had had trouble with his nose for several years. One year ago his nose began to discharge and became very sore. About this time a traveling medicine man came through his part of the country selling an inhalation powder for treatment of diseases of the nose. Of this powder he purchased a large amount, and to make doubly certain of a cure traveled with the medicine man for several months taking treatments under the latter's personal directions. At varying intervals large masses of necrotic material were discharged from his nose, relief following. Until two weeks ago the condition had remained stationary; at this time a fly went into one nostril and came out of the other; following this event he rapidly became worse.

On October 2d he felt something moving in his nose and sought the services of a regular physician, who treated him several times with

but slight benefit. Finally the doctor injected choloroform and removed seventy-two Texas screw-worms. The patient's condition remained serious, however, and he was brought to the hospital for treatment. At this time a Wasserman test was made, which was strongly positive.

Under general anaesthesia the following conditions were discovered: The walls of the right antrum of highmore were completely necrosed and the antrum filled with worms. The right frontal sinus was opened and the right ethmoid cells exposed. The walls of the antrum on the left side were partly necrosed and the turbinate on this side was partly necrosed and the ethmoidal cells exposed. The right eye was swollen shut and a worm was found in the lacrymal sac. These worms were the ordinary Texas screw-worms, measuring about one inch in length and one-eighth of an inch in diameter. Forty were removed at operation.

On the right antrum a Caldwell-Luc operation was performed, and on the left antrum a Denker's operation was done. The Ballenger turbino-ethmoidectomy was performed on both sides. The right frontal sinus was curetted, the right canaliculus was split and the lacrymal duct probed; all sinuses were packed with iodoform gauze after a thorough irrigation with a ten per cent solution of chloroform. —George W. Huber and Frank L. Flack, *Jour. A. M. A.*, December 26, 1914.

George J. Alexander.

BOOK REVIEWS

A TEXT-BOOK OF DISEASES OF THE NOSE AND THROAT. By D. Braden Kyle, A. M., M. D., Professor of Laryngology and Rhinology, Jefferson Medical College, Philadelphia. Fifth edition. Thoroughly revised and enlarged. Octavo of 856 pages with 272 illustrations, 27 of them in colors. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, $4.50 net.

The appearance of the fifth edition of this text-book is sufficient testimony of its worth in the past. The author has carefully revised the work and brought it up to date. He has incorporated everything new and at the same time has not neglected to retain all that is old and of value. The author has succeeded in making his work thoroughly comprehensive; indeed, there is nothing on the subject of the nose and throat that has not been considered, the testimony of which is found in the five pages of index.

Concerning the subject of Vaccine Therapy he is conservative and quotes the limitations of this form of treatment as set forth by Sir A. E. Wright in six terse paragraphs. In the chapter on External Nasal Deformities we note with satisfaction that he describes certain bridge splint operations fully and presents several illustrations showing the technique.

He makes a careful distinction between intumescent rhinitis and cyanotic congestion of the mucous membrane. He claims that the swelling in cyanotic congestion is due to venous stasis secondary to some disturbance in the function of some distant pathologic organ, heart, lungs, kidneys, liver, etc., while the swelling in intumescent catarrh is due to the exudate.

His chapter on Voice and Speech is particularly full and instructive. On the subject of defects in voice and speech he quotes Makuen freely and recognizes Makuen as the leading American authority on the subject.

The book is carefully written and should appeal strongly to the student, the general profession and the specialist, in consequence of which it should find a ready sale.—Ed.

GLAUCOMA. A SYMPOSIUM. Edited by Nance and Peck. Published by the Chicago Medical Book Company. Cloth, price $1.50; pp. 150.

A symposium presented at a meeting of the Chicago Ophthalmological Society, November 17, 1913. The contributors, all leaders in the American ophthalmologic profession, seem to have concentrated their best efforts in this excellent little work. The contributions are as follows:

Etiology and Classification of Glaucoma, Edward Jackson, M. D. Discussion, Francis Lane, M. D.

Pathology of Glaucoma, John Elmer Weeks, M. D. Discussion, E. V. L. Brown, M. D.

Concerning Non-Surgical Measures for the Reduction of Increased Intra-Ocular Tension, George Edmund de Schweinitz, M. D. Discussion, Nelson Miles Black, M. D.

Trephining for Glaucoma, Robert Henry Elliott, M. D. Discussion, Frank C. Todd, M. D.

Operations Other Than Schleral Trephining for the Relief of Glaucoma, Casey A. Wood, M. D. Discussion, Albert E. Bulson, Jr., M. D.

Each contributor has taken a particular phase of the subject, so that nothing is left untouched. It is a thorough, up-to-date work that should find a ready sale among those desiring to keep abreast the times in ophthalmology.—Ed.

NEWS ITEMS

Dr. J. R. McCleary, the Business Manager of the JOURNAL, sailed on the 27th of January for a well-earned and much-needed rest in Cuba and Jamaica. Only those closely associated with Dr. McCleary can appreciate the amount of work and effort he has put upon the JOURNAL to bring it up to the highest standard. As an indication of the spirit of the man in this connection, I quote from a letter received from him under date of December 11, 1914:

"I have been up against the same game and at night when I go to bed I feel that I am about the biggest goat that ever lived, but with a good, healthy sleep and a good grip on the bit I feel determined to put this thing (referring to the JOURNAL) in the best possible shape that we can conceive of."

We all wish Dr. McCleary a pleasant journey and trust that he will return much benefited and with his usual old-time vigor.

Dr. A. A. Eikenberry is spending several days in Ann Arbor and Chicago preparatory to equipping a new Eye, Ear, Nose and Throat Hospital in Indianapolis.

Dr. Milton A. Barndt, formerly of Milwaukee, Wis., is now located at 510 Long Beach Bank Building, Long Beach, Cal.

THE JOURNAL OF OPHTHALMOLOGY OTOLOGY AND LARYNGOLOGY

CINCINNATI, OHIO

Editor: DR. G. W. MACKENZIE
Associate Editor for March: DR. I. O. DENMAN

CONTENTS FOR MARCH, 1915.

EDITORIALS

Page

French Red Cross Hospital 187
Borderland Topics in Ophthalmology and Otolaryngology 189
Regulation of Optometry 191
Our Allies, The Nurses 192
"The Air We Breathe"—Editorial Preface to Symposium on Infections of the Upper Air Passages 195
Announcement 197

ORIGINAL CONTRIBUTIONS

Pharyngo-Eustachian Infections. By I. O. Denman, M. D 198
Brief Review of the Pathology and Bacteriology of Naso-Pharyngeal Infections, with Some Suggestions for Effective Vaccine Therapy. By Theodore Zbinden, M. D 202
Tonsillar Infection. By W. D. Rowland, M. D 213
Diphtheria. A Consideration of Its Diagnosis and Rational Therapy. By Burton Sandford, M. D 221
Influenzal Infections of the Nose, Throat and Ear. By George J. Alexander, M. D 231
The Anginas of the Exanthemata. By N. Starr, M. D 237
Vincent's Angina. By Harold A. Foster, M. D 240
Modern Views of Syphilis. By Burton Haseltine, M. D 242
A New Ophthalmotrope. By George A. Suffa, M. D 245
The Relative Proportion of Cases in a Nose and Throat Clinic, Based on 1,000 Cases. By Douglas Macfarlan, M. D 252
Guaiacol in Ophthalmology. By H. L. Gowens, Jr., M. D 256
CURRENT LITERATURE 259
ABSTRACTS 268
SOCIETIES 273
NEWS ITEMS 274

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The Journal of Ophthalmology Otology and Laryngology

Vol. XXI. MARCH, 1915. No. 3.

EDITORIAL

FRENCH RED CROSS HOSPITAL

The attention of the JOURNAL has been called to the hospital recently opened to homoeopathic physicians by the French Government for the treatment of the wounded and sick.

"The first headquarters was at the Hotel du Rhin, Dieppe, placed at the disposal of Mr. Wright and his assistants, Drs. Hare, Cunningham and Schley, by the municipal and military authorities. This provided a service of sixty or seventy beds and two ambulances.

"The skill and executive ability of the staff soon made itself evident, and their services were requisitioned for other hospitals in the same part of France. Within a short time the French Government placed at their disposal an old monastery at Yvetot, fifteen miles from Rouen, and between this famous city and the seaport Dieppe. By this time a Mrs. Bartlett, of Rochester, N. Y., had become interested in the work of this unit and assumed charge of the housekeeping end of the institution. The monastery was put into the best possible shape with a view not only to present needs as a surgical hospital to care for the wounded, but having in mind also that the war is liable to be succeeded by epidemics or the need for the care of convalescents over a protracted period. By means of funds subscribed principally in England 500 beds were installed. It is understood that the nursing staff includes five American nurses, two of whom were trained at the New York College and Hospital for Women. Mr. Stetson, a Harvard graduate, did 'the work of a common laborer' in helping to get the new hospital at Yvetot in order.

"Here, then, is an object which should command the support of every homœopathic physician who feels the call to do what he can in the name of a common humanity for his suffering brothers in Europe. Among the patients are many of the gallant Belgian soldiers Help of every sort is urgently needed—doctors, nurses, surgical stores and equipment. Any money spent for equipment will not meet a temporal need only; the French Government has stated that the monastery will be made a permanent eleemosynary institution of some sort after it has served its present purpose as a soldier's hospital."

Appreciating the fact that no class of society is, as a whole, more charitable than physicians, the JOURNAL takes this opportunity to inform its subscribers of the existence of this worthy cause in France. It is to be hoped that there will be a cheerful and liberal contribution both from physicians and those of their clientèle who are charitably inclined.

Contributions or pledges will be received and forwarded by the NORTH AMERICAN JOURNAL OF HOMŒPATHY.

FORM OF CONTRIBUTION

To the NORTH AMERICAN JOURNAL OF HOMŒOPATHY,
1748 Broadway, New York.

Date.....

Please receive and acknowledge in the columns of your journal on behalf of the French Red Cross Hospital at Yvetot the sum of $.....herewith.

Name .....

Address .....

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To the NORTH AMERICAN JOURNAL OF HOMŒOPATHY,
1748 Broadway, New York.

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I hereby agree to contribute, until further notice, the sum of $..... *weekly / *monthly for the support of the French Red Cross Hospital at Yvetot, and to send you my check for this amount on the first day of each *week. / *month.

Name .....

Address .....

*Cross out the word which does not apply.

BORDERLAND TOPICS IN OPHTHALMOLOGY AND OTOLARYNGOLOGY

Under the above heading Dr. Joseph C. Beck, of Chicago, addressed the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 23, 1914. The paper was published in the January, 1915, number of the *Pennsylvania Medical Journal*. The subject and the manner in which Dr. Beck presented it deserves abstracting in the editorial columns of our Journal.

He first calls attention to the fact that "the time has arrived when specialism is an accepted fact in all professions and the 'Jack of all trades' can be considered a saying of the past.

"For instance, the chair of surgery with one head of the department has as its associations sub-heads in the various surgical departments, as ophthalmology, otolaryngology, orthopedic surgery, gynecology and obstetrics, and genito-urinary surgery.

"Further subdivisons are made in the subject of surgery, as for instance, oral surgery, neural surgery, etc., and then within these, special surgical accomplishments are sought, as for instance, surgery of the special organs, such as thyroid gland, the stomach, etc. It is the purpose of the writer to discuss this question of border-line surgery which comes within the confines of the ophthalmologist and otolaryngologist desiring to show the needs of having a broad knowledge of the subject of general medicine and surgery, and versatile in the means of diagnosis of conditions which are intimately associated with diseases of the eye, ear, nose and throat."

In calling attention to some of these special borderland subjects, he mentions:

(a) *Plastic and oral surgery.* "In considering the plastic operations about the head and neck we may specifically mention nasal deformities, cleft palate and hairlip and cheeks, external ear deformities, muscle and nerve plastics. Plastic about the eyelids and eyeball. Plastic of the larynx, trachea, pharynx and upper portion of the oesophagus."

(b) *Secondary involvement of the neck following malignant disease of the nose, throat and ear.*

(c) *Intracranial complications from nose, throat and ear affections.* "The most important part of this subject has to do with the diagnosis,

and I believe that in no department of medicine has there been such progress as in ophthalmology and otolaryngology in reference to the intracranial complications. The work of the Vienna School in regard to the diagnoses and treatment of the labyrinth and brain by Barany, Neumann, Ruttin and others, the splendid work by Mygind, Manasse, Breger and others on spinal puncture for diagnostic therapeutic purposes, of Kopetsky, Haines and Day on diagnosis and surgical treatment of meningitis, and finally, Balance, Jones and McKernon on sinus thrombosis marks the grand epoch in this line of work."

In replying to Professor Starr's statement that there is no reason why an otologist or rhinologist should ever attempt to operate within the cranial cavity, Dr. Beck calls "attention to statistics which will demonstrate very easily between cases operated on within the cranial cavity by competent otological and rhinological surgeons, and those by general surgeons. I wish to emphasize the phrase 'competent otological and rhinological surgeons.' In a recent article that I published, entitled 'Failures and Successes in Intra-cranial Surgery,' in which I gave my statistics in the past fifteen years on the above mentioned subject, I have had occasion to go into the literature quite fully, and can unhesitatingly say that this borderland subject of brain surgery and otolaryngology must certainly be accredited as belonging to the domain of the latter."

He then takes up the subject of the *Hypophysis,* in which he says, "The rhinologist is very little concerned in this disease except that it has been found that the best route to reach the hypophyseal gland is by way of the nose."

He then cites the different methods.

He includes neck surgery and surgery of the thyroid gland, the salivary glands, carcinoma of larynx, branchial and other cysts.

The Journal agrees with Dr. Beck in all that he sets forth, and would add a very important subject that he has overlooked, namely, fractures of the base of the skull when they include either the nasal accessory sinus or the temporal bone. Attention was called to this latter subject editorially in the December number of the Journal and definite failures were cited on the part of a general surgeon in a prominent hospital that would not be likely to happen in the experience of an otologist. Since then two more blunders have been committed

by the same surgeon, not to mention what is happening daily in the experience of other general surgeons. One was a case of basal fracture through the pyramid involving the inner ear where the surgeon balked on a labyrinthine operation and permitted the patient to die before he would permit the otologist to operate. The other case was that of a fracture of the skull involving the frontal sinus, where the surgeon through a lack of knowledge of rhinology performed a piece of work that a tyro-rhinologist would be ashamed of.

The JOURNAL trusts that other specialists in our field of surgery will take up the good work of drawing the attention of the profession at large to the comparative merits of the general surgeon and the specialist in these borderland cases.

In justice to the general surgeon the JOURNAL will welcome and publish any reply offered upon the questions raised in this editorial. There is no intenton to underestimate the skill of the general surgeon in his proper sphere; we are all brother physicians and as such realize our duty to one another, but never to the extent that we should blind ourselves to our common duty to humanity.

REGULATION OF OPTOMETRY

This problem crops up from time to time in various states, showing the need of it. Thirty-three states have already adopted some such regulation, in most cases it being administered by a board of optometrists themselves. In New York the Board of Regents, which as a central body administers the regulation of all professional and semi-professional occupations allied to medicine and surgery, also regulates optometry.

At the present time there is a controversy in Pennsylvania as to whether this control shall be in the hands of a separate board of optometrists, or in the hands of the Board of Medical Education and Licensure with the examinations made by an advisory board composed of optometrists, as is done in the examinations of drugless healers and chiropodists.

There is no denial of the rights of the optometrists; they should and must be dealt with fairly; their profession is one of ancient standing. Until a comparatively recent date a large part of that which is done by optometrists was exclusively within their province and was not covered in practice by the efforts of the physician or surgeon.

Optometry, however, must undoubtedly be considered as an allied branch of medicine, notwithstanding the denial of this by a Philadelphia court, as it and opthalmology overlap so closely.

Efficiency is best obtained by centralization in administrative matters as well as in industrial, and it seems inadvisable to create separate boards now. In fact the time will soon come in Pennsylvania as in New York, when a central board will control osteopathy, pharmacy and dentistry as well as medicne and surgery and their other allied branches. It is to be hoped that the Pennsylvania Legislature will see the light.

OUR ALLIES—THE NURSES

There can be no doubt in the minds of those who are best informed on the subject that a physician's most efficient ally is a well trained nurse.

It is interesting to note the amazing rapidity in the growth of the nursing profession in the last forty years. According to the "History of Nursing" the systematic training of nurses in America began on a very small scale in 1873 and provided for a one-year course and lectures, as follows: One on position and manners of nurses in homes of patients, four on physiological subjects, four on the care of the sick, two on surgical nursing, two on child-bed nursing, one on the use of disinfectants to prevent contagion and one on general nursing.

This course was indeed meager when compared with the courses offered by a well-equipped, modern training school of today, but it served as a beginning, and in spite of the many difficulties to be overcome, gradual progress was made and surprising results obtained.

In order to secure definite results the need of organization was felt, and this was accomplished in a small way in Chicago in 1893, when an organization called the American Society of Superintendents of Training Schools was formed. Three years later the Nurses' Associated Alumnae was organized in New York, and bringing together as did its membership the united efforts of many of the strongest and most devoted of the pioneer nurses, from this date nursing as a profession made unbounded progress.

Through these organizations much has been accomplished to increase the efficiency of the nurse in training by securing for her longer training with shorter hours, better food and accommodations, a

uniformity of training with higher standards of education and better nursing care for the sick.

Through the combined efforts of nursing organizations much has been done to standardize nursing education by securing the passing of bills in various states, which safeguard the interests of trained nurses.

In 1903, after a great struggle, the state legislature of North Carolina passed a bill which provided for the registration of nurses. In rapid succession thirty-seven states followed with similar bills, nine of which make registration compulsory. Twenty-seven states have recognized the rights of nurses and have given full boards of nurse examiners.

Through the enactment of these laws, the strength of correspondence schools and commercial interests which are involved in the exploitation of cheap nursing service have been disclosed. We are forced to recognize the fact that the name "nurse" must be protected by legal enactment, so that women who have taken short courses in unrecognized hospitals, those who have been dismissed from standard training schools on account of inefficiency or for moral reasons, and girls who have had positions in doctor's offices for a short time, cannot don the uniform of some hospital and impose their services upon the public as that of a graduate nurse.

The practical nurse has her place, but she must recognize it and keep it.

State registration has disclosed weaknesses in many training schools and is doing much to regulate supervision and improvements.

There are still many schools that are deficient in organization and curriculum and that only make a pretense of complying with state laws.

Ohio is still without registration. The State Association has been fighting long and valiantly for it. The nurses have refused to accept registration until they can have a full board of nurse examiners. This cannot be granted because the state constitution provides that no person may hold office in the state unless he possesses the qualifications of an elector. Since women cannot vote in Ohio they cannot hold office. However, the Ohio nurses are confident that some means will be found whereby the difficulty may be overcome.

Registration is fast raising the standard of training schools, and

Ohio must have registration in order to keep out the undesirable nurses who cannot pass the examinations in other states.

The laws of all the states provide that no nurse can apply for examination who is not a graduate of an approved hospital. An approved hospital must have not less than fifty beds. Its officers must be graduate nurses. Its student nurses must have attained to the age of twenty years and must complete a three-year course of training. The courses are complete and exacting. A girl must have had a high school education or its equivalent before she can be admitted to a training school. She must have brains and a great deal of moral courage and physical endurance to complete the prescribed course of a training school.

There is no profession which requires more resourcefulness, self-control and sympathy, or so much good cheer. A sick man is whimsical; his nurse must be discreet; an ill woman is exacting, her nurse must be patient; a suffering child is fretful, its nurse must be loving and tender. At the supreme moments in life the nurse takes her place as a necessary, steady, dependable and sympathizing servant and friend. She places the newborn babe in its mother's arms; when the soul has left its house of clay it is the nurse who covers the face of the dead and tries to comfort and minister to the stricken ones who are left alone. During times of danger and contagion, in the homes of squalor and woe, the nurse assumes her duties as cheerfully and does her work as effectively as when she is serving the rich or great.

Should not the nurse's rights be recognized? She has had to fight every step of the way. While the world has begun in a measure to recognize and value her services, yet in some states of our Union it has been impossible to secure laws that would raise her much above a common drudge. The fact that nurses stand so unitedly for better standards is the assurance that they will win.

There are nine universities that have taken the training of nurses as a part of their work and some of them confer degrees upon the graduates of nursing schools.

The profession is striving for registration and reciprocity in all states, a uniform curriculum and state inspection.—I. O. D.

EDITORIAL PREFACE TO SYMPOSIUM—INFECTIONS OF THE UPPER AIR PASSAGES

"The Air We Breathe"

The science of bacteriology has done much to change the theories and practice of medicine. Long before the discovery of germ life diseases were known to be "catching," but only by direct exposure to the patient—the "contagion" of our vocabulary. It is only in comparatively recent years that we know something of the vast array of illnesses which are contracted by infection, and that the air which we breathe, the element with which we must every minute be supplied to live, communicates a large percentage of health-destroying, death-dealing infectious diseases.

Following this great discovery in logical sequence came the attention to the area of the human economy which must meet the invasion of the horde of bacteria, and the result of this has been the development of the science, or special branch of medical science, in which we are most interested—rhinology and laryngology.

We may well feel proud of the fact that we are now witnessing a triumph in special practice, that within the last few years all medical men are recognizing for the first time the enormous scope of upper-air-passage infections.

The internist is on the alert for nose and throat infections in his etiological diagnoses, and the therapeutist early seeks the aid of the laryngologist in eliminating the source of infections which find entrance through his field.

In the symposium which follows, we have, with able assistance of the contributors, grouped a discussion of only a few of the more important diseases which show an affinity for and find a systemic entrance through the upper air passages.

We who devote our entire time and energies to the study of the special field of medicine should remember that as specialists we are looked upon as being in possession of superior knowledge and ability to instruct the laity and general practitioner in prophylaxis and hygiene. Can we not therefore enlarge our sphere of usefulness by taking a leading part in our several communities in aerial hygiene?

PHARYNGO-EUSTACHIAN INFECTIONS

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ANATOMISTS describe the pharynx by dividing it into three parts—the naso or epi-pharynx, the middle or oro-pharynx and the lower or laryngo-pharynx. This discussion considers the first division, or the upper third, extending down to the soft palate.

The pharynx is subjected to many varieties of infection which will not be taken up in this paper, as they will be covered by other contributors in this symposium, and to mention them here would be a repetition and would divert from the objective point, viz.: a consideration of those inflammatory conditions which affect the special sense of hearing through the channel of the pharynx and eustachian tube.

Few discoveries in medical science surpass in importance that of the pharynx being the origin of most ear infections. Otology has made its greatest strides since Wilhelm Meyer of Copenhagen, in 1874, discovered adenoids. This was the nucleus of our present-day knowledge of exogenous otitis media. As a matter of common knowledge, the adenoids, or Luschka's tonsil, which are ordinarily removed for the relief of both nasal and eustachian involvement, is only one portion—the largest, it is true, but only the posterior segment of Waldeyer's ring which encircles the naso-pharyngeal orifice. The posterior ends of the inferior turbinates, the lingual tonsil, the posterior extremity of the nasal septum, the cartilaginous rims of the eustachian orifices, the pharyngeal walls, and last, but of vital importance, the fossa of Rosenmüller, all support masses of lymphoid tissue in various amounts. This lymphoid or adenoid tissue, when hypertrophied, causes nasal obstruction and eustachian occlusion with tinnitus and deafness.

Rosenmüller's fossa is an anatomical area which authors have practically ignored, anatomically, physiologically and pathologically. It is, so to speak, "a desert isle"—an undiscovered territory. Yankauer has called attention to it in connection with his oval-eustachian speculum, which is a valuable method in applying direct medication to the tubal orifice and the lumen of the tube itself.

When seen by the aid of the pharyngeal mirror it *appears* as a slight depression oval in form, its longest diameter nearly vertical and situated behind the posterior rim of the eustachian orifice, forming the recess or angle of the pharynx between the lateral and posterior walls. The *true* anatomical formation of this fossa was a surprise to me, and has modified my opinion greatly as to its importance. The depression which we see with the mirror is merely the orifice of a conical cavity, one-half to three-quarters of an inch in depth, extending along the posterior wall of the eustachian tube; a blind pouch, with the apex outward, nearly opposite the isthmus of the eustachian tube.

In the orifice and dotted all over the inner surface of the fossa is found adenoid tissue, which, in conjunction with the swollen and thickened mucous-membrane in inflammatory states, retains within the cavity mucus, and when infected a muco-purulent secretion.

This deep recess or cavity becomes a veritable cesspool for infectious material, and is the very last portion of the pharynx to clear up after an inflammatory process has been present. After all other structures are free, clear and dry, Rosenmüller's fossa will still be found loaded with mucus and muco-purulent material.

During this period the patient almost invariably is annoyed by occlusion of the tube, tinnitus and slight deafness, yet the tube itself may be dry and free from inflammation. Catheterizing shows by the auscultation tube—first, a muffled sound, with much bubbling of mucus, and then a clear, free passage of air as the tube opens. After a few minutes, or perhaps immediately, the tube is closed again and the patient is as uncomfortable as before.

The reason for failure in such cases is now perfectly plain to the writer. The tube is closed, not from trouble within the tube itself, but from its posterior wall being pushed forward against the anterior wall by the pressure of a swollen, edematous, infected pouch behind the eustachian tube, the fossa of Rosenmüller.

A continuation of this condition results in a chronic thickening by hyperplasia of tissue, so that the tube is permanently narrowed or occluded, which leads to otitis media and deafness.

I am convinced, after closely observing nearly 100 private cases, that the usual procedure in treating these cases overlooks a most vital

area. Too little attention is given to clearing away the source of the inflammatory condition.

The almost routine treatment of eutsachian obstruction, occlusion, tinnitus and catarrhal deafness in some superficial spraying or swabbing of the naso-pharynx, which never penetrates the Rosenmüller fossa; then inflating the tube, perhaps followed by pneuno-massage of the tympanic membrane. I need not state that the period of treatment in chronic cases is often long and discouraging to both the patient and physician. Failure is too often the result, and the patient drifts away from one office to another. The tube continues to close, and exaggerated pneumo-massages, often prolonged unduly in sheer desperation, renders the drum membrane thin and flaccid, thus actually lowering the acoustic function. And worse than all, as time goes on, the case passes into the chronic, adhesive type, and a degree of deafness is reached which can not be cured. Gentlemen, we are trying to get rid of the smoke while the fire (Rosenmüller Fossa infection) still burns.

From the day, nearly four years ago, when I started in to extinguish the "fire" in such cases, I have turned, for myself, the most trying part of my work into one of the most pleasant, satisfying class of cases that I treat. The naso-pharynx must, of course, be freed in the usual way of hypertrophied tissue, and often infected or hypertrophied tonsils must be removed. The fossa of Rosenmüller must be cleared of adhesions, adenoid and granular tissue. Then the first treatment of the eustachian tube is not to the tube direct, but *behind* it. Rosenmüller's fossa must be rendered sterile and dry. This can not be accomplished by astringents or caustics. These merely close the pores or mucus glands and drive the infection deeper.

Argyrol is the agent which, when held in contact with the inflamed tissues and membranes long enough, will deplete them, and will abstract from the submucous tissues and the mucus glands all the watery, juicy, mucus and muco-purulent material which is closing the eustachian tube and forcing all the stages of catarrhal deafness.

The manner in which Argyrol acts has been described by Dowling, of Albany, who gave us his valuable method of draining the sinuses by tampons saturated with Arygrol solution.

I have adopted the use of such tampons in the treatment of Rosenmüller's fossa, but as the technique is still in process of perfection I

shall reserve a full description of it until a later date.

A few minutes after the tampon is placed in the fossa a profuse discharge of glairy mucus begins and continues to be expectorated by the patient for from ten to twenty minutes. The application of the tampons is repeated about every second day, the discharge diminishing until the fossa is dry.

Catheterization of the tube may or may not be performed during the treatment, but if the occlusion is complete and resorption of the air has taken place from the middle ear, inflation by equalizing the air pressure gives a temporary improvement in the hearing and tinnitus, and is permissible. It is only after the fossa is dry, however, that the inflation is of much therapeutic value.

When all secretion has stopped and the tube becomes patulous, I use for the first time tubal treatment; i. e., vapors, bougies, inflations, and, *last* of all, instead of *first* of all, I employ in chronic cases for a limited time only (four to six weeks) a mild pneumo-massage of the tympanic membrane.

425 Ohio Building.

A BRIEF REVIEW OF THE PATHOLOGY AND BACTERIOLOGY OF NASO-PHARYNGEAL INFECTIONS, WITH SOME SUGGESTIONS FOR EFFECTIVE VACCINE THERAPY

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THERE is probably no part of the body in which pathology is so frequently synonymous with infection as is the case with the naso-pharynx. For, with the exception of congenital malformations, traumatism and certain neoplasms, a great majority of diseases are due to microbial agents. Even in the case of the exceptions mentioned, traumatism and congenital deformity would of themselves often be insignificant if they did not aid the micro-organisms in producing their characteristically diseased conditions, whereas a large number of the new growths, as polyps, bony excrescences, adenoids, hypertrophied tonsils, are directly the result of chronic inflammations of bacterial origin. Even hay fever, which, in its purest form, is not a bacterial disease, is frequently complicated by the additional changes produced by micro-organisms, and besides in its nature it is, after all, very similar to an infection; the causative agent, pollen, compares closely and in detail with a bacterial toxin.

The naso-pharynx, because of its location and structure, is a receptacle for the countless micro-organisms, both harmful and not, that are constantly present in the air and food which enter the body. That there should be no more diseases, both in the pharynx proper and also in the entire system, is due to a large extent to the peculiarities of these portals of entry. The mucous and salivary secretions were once considered to possess some anti-bacterial power, but that notion is hardly borne out in fact. For this viscid secretion is of a mildly alkaline reaction, contains small amounts of proteids, as well as tissue salts, and is kept almost at body heat. It is after all a rather favorable culture medium, especially for pathogenic organisms, so that its function must not be considered so much the destruction of bacteria, as to gather them up and prevent them from getting into the system. It allows

them to be removed mechanically or to be swallowed and destroyed by the acid secretion of the stomach.

That we are not constantly the victims of naso-pharyngeal infections is further due to a natural immunity of the cells of the mucous membranes, as well as to the extremely rich arterial blood supply of the tissues. So that whatever toxins or germs do get beyond the surface of the mucosa are, as a rule, promptly destroyed and rendered harmless.

However, we have spoken only of normal conditions. When we get abnormal conditions, such as a depressed bodily state, or a peculiar weakness in some individual to certain foreign organisms, infection takes place, resulting either in local disease of the naso-pharynx, with little or much systemic involvement as the case may be, or we get a more general infection by an organism that has gone past the natural barriers.

PATHOLOGY

The pathological changes which accompany the infections of the nose and throat are in themselves not characteristic nor of particular interest. They are the changes found in inflammations in general, and it would not be necessary to describe them in detail. Classifications even are of little service, besides being very difficult.

Infections may be acute, sub-acute or chronic, or acute exacerbations of chronic forms, but in such classifications no reference is made to the infective agent, nor to the previous condition, whether normal or abnormal, of the tissues involved. Again, with reference to the discharge, we speak of serous, mucous and purulent infections, or sequences or combinations of them.

A more logical arrangement would seem to be approached when the infective agent and the particular tissues involved are considered. So we may speak of an influenzal rhinitis, or a streptococcic tonsillitis, and so on down the list. But again we meet with difficulties, because an infection is but with extreme rarity due to a single organism, and is with almost as great rarity confined to one area. On the contrary, we usually have to deal with a mixed infection, and with a disease that spreads from one part to another.

Further confusion arises from the fact that the same organism may cause different varieties of infection. Thus, the streptococcus may

produce pseudo-membranous inflammation, or it may produce a purulent, superficial catarrh, or a more deep-seated involvement, with production of abscesses. Or an infection due largely to one germ may start as a catarrhal form and later change to a purulent one. Or a disease of one part may be due at one time to a streptococcus, and a short time later, with no evident intermission, the B. Friedlander or another organism may continue what is apparently the same disease. Not infrequently it happens that a simultaneous involvement of many different tissues may occur with a different causative agent in each of the separate locations.

Writers on the pathology of these inflammations mention chronic hypertrophic and atrophic forms, terms which probably have some descriptive value when either form occurs in its pure state, but a clear case of either variety rarely occurs. Also, these two forms have a tendency to succeed one another. Then, the terms are after all incomplete, inasmuch as they fail to include the causative agent or agents.

These few statements must suffice for a review of the pathological changes found.

BACTERIOLOGY

It would be a wiser plan to go on to a brief discussion of the bacteriology of these infections, and to mention, in connection with the individual organisms, any specific pathological changes each may produce.

As was suggested above, the bacterial flora of the normal naso-pharynx is very extensive, and likewise the number of organisms producing naso-pharyngeal disease is very large. It would probably be impossible to even mention all the pathogenic organisms that produce infections, and we shall content ourselves with enumerating but a few of the more common ones. Thus we find first the various Staphylococci and Streptococci. Then the Pneumococcus, the Meningococcus and the Streptococcus rheumaticus, which cause local disease in the naso-pharynx, probably with greater frequency than they cause the more definite diseases with which each is commonly identified; i. e., lobar pneumonia, epidemic cerebro-spinal meningitis and acute articular rheumatism. Next we may mention the B. Friedlander group, which is the prominent etiologic factor in many chronic infections, including the condition called ozena. Among other organisms are the B. influ-

enzae, B. diphtheriae, B. tuberculosis, Treponema pallidum, B. pyocyanus, B. septus. Finally, the B. proteus, M. catarrhalis, B. coli and Diphtheroid bacilli, while of little causative importance in themselves, nevertheless frequently help to complicate other infections.

The complexity of the subject is now more apparent. But fortunately it is not always necessary for the attending physician to work out the bacteriology; he can carry out his treatment on general principles. However, more protracted and serious cases are frequently met with, in which an accurate knowledge of the infecting process would prove to be of great value in treatment.

At this point it may not be out of place to emphasize the fact that these conditions are not only *infectious*, but directly *contagious*, a fact which is altogether too frequently neglected, not only by the laity, but by the medical profession itself. It seems strange that so much warning is given against exposure to drafts and cold air, and so much attention drawn to hygienic methods aiming at raising bodily resistance, all of which is very good, so far as it goes, while we neglect to mention that the discharges from infected individuals contain enormous numbers of highly virulent organisms and should be disposed of with the greatest of care. It seems to me that a little more emphasis given to this fact would greatly diminish the number of cases of so-called minor colds, which are in reality not minor ailments at all when we consider the enormous possibilities of serious harm which they possess.

Accurate diagnosis may be sometimes unnecessary and impracticable, though no one could deny its desirability in every case. Many incorrect diagnoses are due to gross ignorance or carelessness on the part of the attending physician. For example, there is no more common expression (though perhaps less common than a few years ago) than to diagnose a case as "the grip." Now the grip is really a disease produced by one specific organism, the B. influenzae of Pfeiffer, and it is by no means as common as one would believe; in fact, it is decidedly rare, except when it occurs in extensive epidemics. This infection can be diagnosed without much difficulty with a little cultural study.

Most common colds, or acute rhinitis, have been due to an organism called the B. septus, or coryzae, but not infrequently an epidemic may be due to the Pneumococcus or a Streptococcus, or even the Meningococcus. In fact, an epidemic of colds is usually due to a single organism

or a combination of two organisms from those mentioned above, and the entire epidemic will be found to be caused by the same infective agent or agents.

TUBERCULOSIS AND SYPHILIS

Tuberculosis and syphilis are considered amongst those infections with a more characteristic pathology. Yet in actual practice their appearances are by no means so easily recognized. A syphilitic gumma on the bridge of the nose is probably most easily recognized, but in other regions a gumma, a mucous patch or a tuberculous ulcer can not be diagnosed off-hand. Of course, in the case of syphilis we usually have a definite history and various signs and symptoms from which to make the diagnosis. A microscopic search for spirochetes in serum taken from lesions in the naso-pharyngeal region is rendered difficult because of the presence of several similar organisms in normal individuals. It is advisable, rather, to resort to the Wasserman test for diagnosis. A note of warning is necessary with regard to perforations of the septum or of the palate. These have at times been considered pathognomic of syphilis, but that is by no means always the case. I have known of three or four cases during the last year in which such lesions were proven to be not due to syphilis at all.

Tuberculous lesions of the naso-pharynx most frequently occur in patients with advanced pulmonary disease, in whom diagnosis is easy and treatment of little value. When lesions do occur in the naso-pharynx without marked pulmonary disease, the diagnosis is not at all easy. The main reason for this is that the primary infection is complicated by secondary infections, which modify appearances. For diagnosis it is best to secure some caseated matter from the lesion or some of the tissue, and make a careful microscopic search for the tubercle bacillus and for the tubercular granuloma.

OZENA

There is one form of chronic inflammation called ozena, which is associated with a very abundant and foul discharge. The condition was described years ago by the specialists, but recently Abel found that such a disease is produced by a bacillus belonging to the Friedlander group. Abel was able to prove the connection between the organism and the disease, although his claim that the organism called after him is a definite entity is not yet universally accepted. It is better to

take the stand that a great many cases of ozena are due chiefly to the presence of this organism, or similar forms of the Friedlander group, and that other cases of ozena are due to other organisms, and that the Abel bacillus or similar ones may produce other forms of disease.

The condition is of particular interest because of its extremely unpleasant nature, and because most cases yield readily to treatment by autogenous vaccines.

MORE EXTENSIVE INFECTIONS BY WAY OF THE NASO-PHARYNX.

It was mentioned above that a number of diseases are caused by organisms which go beyond the portals of entry found in the naso-pharynx. Amongst these we find some general infections, as well as a much larger number of infections, which later become localized in some organ or group of organs.

It has long been known that usually an acute inflammation of the tonsils precedes an attack of articular rheumatism. There is little doubt that this Streptococcus rheumaticus of Poynton and Payne and other investigators enters the system by way of the weakened and inflamed tonsils, gets into the circulating blood and settles down in the tissues about the various joints.

The Streptococcus cardiacus, which attacks especially the valves of the heart, and is closely associated with the Streptococcus rheumaticus, also enters the circulation by way of the tonsils.

Epidemic cerebro-spinal meningitis frequently starts as a tonsillitis, or other naso-pharyngeal disease, where the Meningococcus first attacks and overcomes the resistance of the tissues, enters the system proper by way of the lymph channels, and localizes itself in the membranes of the brain and spinal cord.

The Pneumoccoccus, of course, is considered the causative agent of lobar pneumonia, and in that case probably is taken into the lungs with the inspired air. Yet that need not be the invariable mode of infection. It has been demonstrated that the organism first caused tonsillitis or rhinitis, thereafter entered the circulating blood, or spread by way of the lymph channels, to become later localized, not always in the lungs, but sometimes in the joints, sometimes in the heart, and not infrequently in the membranes covering the central nervous system.

The tubercle bacillus has long been known to use the naso-pharynx as its portal of entry into the system. As was mentioned above, it

rarely causes primary disease in this region. In that case we must consider that the organs here are first impaired by infections from other micro-organisms and bacteria, amongst which the tubercle bacillus is included. The latter is then enabled to enter the blood or lymph circulation. Then, whereas the system can dispose of the weaker organisms, the tubercle bacillus settles down in some organ or some lymph gland, and slowly develops its pernicious activity.

We must be reminded of one further fact, and that is, that the mere presence and development of germs does not mean infection. In fact, it may be a normal condition and a perfectly harmless one. However, that depends on the organism, and it is not only possible, but a not infrequent occurrence, that the products of an organism or the elements composing the dead germs may cause no local inflammation, or only a very slight reaction, and the constant absorption of these substances may produce chronic diseases that are not exactly of an infectious nature. Thus we have probably a considerable number of cases of arthritis, of mild chronic invalidism, of neurasthenia, of arterio- sclerosis, or chronic nephritis, which are caused more or less by mild toxins absorbed from the nose and throat. For, as already mentioned, the minute structure and arrangement of the parts, with the numerous folds, crypts, recesses, sinuses and cells, bathed with a secretion favorable to germ growth, are particularly suited for the development of such conditions.

TREATMENT BY VACCINES

From their nature one would expect that many of the diseases of the naso-pharynx should be amenable to vaccine treatment, as a large proportion are due to infections. The bacteriology can be thoroughly studied without great difficulty, and the affections are both localized and relatively superficial. Any one who has had even a narrow experience with the application of proper vaccine therapy will agree that these expectations are realized in actual practice. Every physician who has to take care of such cases will do wisely by looking into this matter; else he will often fail to do the best he can by his patients, and will give up cases as incurable when he could really cure them, or at least win their gratitude for considerable amelioration of their symptoms.

SELECTION OF CASES

Naturally not all cases are suitable for vaccine treatment, certainly

not acute cases of short duration and of less serious nature. An expensive and prolonged vaccine treatment in such cases would only be advisable for patients who have frequent attacks of colds each season, and appear to be especially susceptible to the causative agents. In such cases treatment would be intended to produce an immunity against subsequent attacks rather than to cure the particular attack. Experience proves that the treatment does produce this immunity, although the course must be repeated probably every year or two, because the immunity persists only a few months or a year.

Vaccine treatment will find its widest applicability in the chronic affections, but one must have a clear understanding of what to expect from the treatment. Serious deformities, hopelessly diseased tissues, new growths, imperfect drainage, etc., must all be attended to, and that before the vaccine treatment is instituted.

On the other hand, there are many cases in which one operation after another has been performed, with ultimate disappointment to both patient and physician. Several cases have come to my own attention where surgical treatment of all kinds had been thoroughly carried out, and yet the patient failed to get well because of persistent chronic infections which yielded in excellent manner to specific vaccine therapy.

I also know of a case of luetic ulcers in the naso-pharynx, in which anti-syphilitic treatment was persisted in until the Wasserman test remained negative after six months. The patient had improved a good deal, but the ulcers still refused to heal up completely. This woman was free from the syphilis, but was suffering from a Streptococcus infection, which healed up rapidly after a rather short course of vaccine treatment, without further use of anti-syphilitic therapy.

DIAGNOSIS

Too much emphasis can not be laid upon the importance of accurate diagnosis, and it is my conviction that this responsibility should rest, not upon the family physician nor upon the pathologist, but upon the specialist. The diagnosis must be based first upon a history of the case, and next upon gross findings on examination by the specialist, and it stands to reason that a great deal of practical experience is necessary to correctly estimate the relative importance of the various pathological changes found. Thereupon it will be necessary to have a thorough

examination made of the secretions obtained from the diseased areas. It is my opinion that the material even should be secured by the specialist, who has the equipment to gain access to the various recesses, cells, sinuses and crypts from which the material is to be secured. Carelessness in obtaining the material will easily lead the pathologist into errors of diagnosis.

The greatest care and judgment on the part of the pathologist are necessary. The material must be first stained and studied with the microscope, because this study will give valuable information as to whether the organisms found are there merely by accident, or as factors in the disease. This study will also help to estimate the relative importance of the organisms found on cultural study. For if the material consists largely of debric and various organisms mixed together, the chances are that the germs are not an important cause of the disease. On the other hand, when pus cells are present, and tissue cells, or even blood, and mucus, and one or two kinds of germs are intimately mixed with the cellular matter and even found in phagocytes, the chances are that an infection is present, and is caused by the organisms found. It is then of importance to select from the cultures the corresponding germs and use them for the vaccines. Experience will show that almost invariably two or more germs are working together to produce the disease.

Many autogenous vaccines have been prepared by simply making a smear of the material on the culture medium and making a suspension of the growth, without isolating the various germs, without even attempting to identify them or to prove the proper causative relationship between the germs and the disease. Nothing could be more unscientific, besides being fraught with considerable danger. For a large dose of a highly virulent organism might be injected into the patient, or a very insignificant dose of a weaker organism might prevent the desired result.

Careful bacteriological study is advisable even in those cases where stock vaccines are to be used. For indiscriminate or haphazard use of the various combinations put out by the different commercial houses must again result in many failures. What would be the use of injecting B. influenzae into a patient whose coryza is due to the Meningococcus? On the other hand, if the causative agents are known, it is possible

to use a corresponding stock vaccine or a combination of vaccines.

But the more scientific method would be to use that particular strain of the germ found in the particular individual. Our classification of bacteria is still far from perfect, and we find bacteria that are apparently almost exactly alike, and yet produce entirely different pathological conditions. The Staphylococci, amongst the organisms usually found in nose and throat infections, are the only ones with quite definitely fixed characteristics, and in their case one can expect fairly good results from the use of stock vaccines. However, it very rarely happens that they alone are the cause of these infections, indeed so rarely that one should really suspect that the causative organism had not been found when only Staphylococci have grown on the culture medium. So that whereas in other infections stock vaccines are often advisable, in the case of nose and throat infections their usefulness is very limited. I would not say they were useless, for I have seen one excellent result from the use of a stock vaccine of the Streptococcus and Staphylococcus mixed. Usually, however, the results leave much to be desired.

ADMINISTRATION OF VACCINES

It will be unnecessary to go into details in regard to administration of vaccines. They are given hypodermically under aseptic precautions, in gradually increasing doses at intervals of a day or two to a week or more, for many weeks or months.

Recently the homeopaths have been recommending the use of doses so small as to avoid the negative phase. Their claim is based not so much on theory, but upon some experimental work tending to prove that immunity can be produced with equal rapidity or even more rapidly by avoiding the negative phase entirely. These findings, however, must be further corroborated. Personally I never favored a strong reaction nor a prolonged negative phase, but I do believe a slight reaction is desirable if for no other reason than as a guide in estimating the dose. Nor can I see any harm in a mild reaction, accompanied by a short negative phase, provided one waits until the negative phase or the general reaction has subsided; because we know that this negative phase will result in a positive phase, accompanied by an increased bactericidal power on the part of the patient. The method of avoiding reactions entirely will result in postponement of improvement in many cases, because unless you have some way of estimating the patient's normal

tolerance, which varies considerably in different individuals, it may be some time before an effective dose will be reached. However, it is very true that vaccine therapy often fails because of the excessive zeal of men who produce a harmful and violent reaction and repeat doses before the previous negative phase has subsided.

In general we might say that the use of large doses, with at least an occasional mild reaction at proper intervals, is advisable in the chronic diseases, whereas in urgent cases it is wiser to use small amounts more frequently repeated, in such a way as to avoid any reaction whatever. For in these latter cases the advisability of vaccines is still a matter of doubt, and it is better to allow the patient the small benefit from minimal doses, providing the danger of doing harm is eliminated.

Perseverance is an important element in vaccine treatment. A course may extend over several months or even a year, and it may be necessary to follow the first prolonged course by several shorter courses of treatment before one has accomplished all he can by the use of vaccines.

The physician should be especially warned that whereas usually results are most marked at the beginning of treatment, and the patient may be apparently cured even after a few weeks' treatment, yet relapses and exacerbations do occur if the treatment is discontinued too soon. These things may even occur during treatment, but in such a case it is better to suspect that the new attack is due to an organism other than the ones being used in the treatment. This has been proven by repeated bacteriological study or examinations. When a new organism enters into the disease it is advisable to add that to the vaccines already being used.

Relapses after prolonged treatment are also frequently due not to the organism used, but to a different one entirely, so that previous treatment must not be pronounced a failure on that account.

In any case it is evident that perseverance is a virtue, and has its reward in the permanent benefit of the patient.

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TONSILLAR INFECTION

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THE Tonsil as a Portal of Infection. Anatomically the faucial tonsil may be considered a part of the lymphatic system, which is one of the chief protective forces of the body as well as a vascular drainage system. Its histologic structure is essentially a group of lymph follicles drained by lymph vessels supported in a connective tissue stroma, all of which is covered by mucous membrane which dips down and lines the crypts about which the follicles are arranged. These lymph vessels drain into the superior deep cervical chain and connect with the inferior deep cervical nodes, which receive also vessels from the head, neck, axilla, superficial arm, and the pectoral region, and in turn empty through efferent ducts into the jugular trunk (Morris-Anatomy).

Under the caption of Protective Forces of the Human Body (Ziegler's Pathology, Ed. 11, Ch. 3), the following are named as having to do with infections and intoxications caused by pathogenic micro-organisms. According to their action: 1, the prevention, by protective epithelium and mucous secretions, of the entrance of pathogenic bacteria into the tissues; 2, the hindering, by phagocytes, of unlimited local spread of bacteria which have gained entrance and begun to multiply; 3, the prevention, by opsonins, of the entrance of bacteria into the blood and their metastases; 4, the hindering, by antitoxins, of intoxication.

Clinical experience has offered a wealth of evidence tending to show that the tonsils are a source of systemic and glandular infection. Briefly may be recounted the cases of tubercular cervical adenitis; of acute and chronic laryngitis, bronchitis, otitis medias with resultant mastoid and labyrinthine complication; and in another group the acute arthridides, nephritis, and endocarditis following tonsil infections. Further investigation may find the etiology of anemias and chronic nephritis to be sought for in submerged and chronically infected tonsils. The homœopathic profession is to be given credit for first showing the relation between tonsil infection and rheumatism.

W. L. Ballenger (Ed. 3, p. 386), in discussing the route of pulmonary infection, refers to Grober's experiments of injecting sterilized emulsion of black Chinese pigment into the tonsil of animals. From these experiments he shows how it is possible for infection to reach the lung apex from the tonsil via the deep lymphatics, the supraclavicular glands, and the parietal vessels; thence by a bridge of inflammatory exudate across to the visceral pleura. Whether this bridge or the hilus of the lung and the bronchial glands is the route to the apex is not known, and is of secondary importance. However, Ballenger is firm in his assertion that systemic and glandular tuberculosis is frequently caused through the tonsil as a primary focus.

From the above evidence it is apparent that an available route for infection from the tonsil to all parts of the body does exist under certain pathologic conditions.

Now, since the tonsil is at one time a protective organ and at other times a source of great danger to the body, let us seek an explanation of this paradox. W. C. Phillips (*Ed.* 1811, *p.* 703) quotes Wright as follows: "My experiments (*Difference of behavior of dust and bacteria in the tonsil crypts, New York Med. Journal,* Jan. 6, 1906) seem to furnish conclusive evidence that under normal conditions bacteria do not penetrate the epithelial layer of the tonsil, in sufficient numbers at least, to cause disease. Yet we know from clinical experience that nerve shock from fractures, hemorrhage, nasal operations, uric acid (?), sudden colds, etc., produce systemic changes whereby infection is more easy and more dangerous. I believe that the mechanism causing surface infection is a chemicophysical change set up by impulses carried along the sympathetic nerves. This produces an alteration in the surface tension existing normally between the bacterial denizen of the tonsillar crypt and the epithelium which lines it. By virtue of this change the livng pyogenic agent enters the system. It is probable that the surface tension does not affect the relation of the epithelium to dust."

I have seen several cases of normal throats develop acute tonsillitis following a submucous resection of the nasal septum.

There is a point up to which the tonsil resists invasion and beyond which the equilibrium is unstable. If protective force No. 1 (Ziegler) is overpowered, disease begins; and if No. 2 is also powerless to

prevent the further progress of the bacterial development, the pathologic condition passes into one producing pyrexia, etc. (tonsillitis); if 3 and 4 fail, then there is tonsillitis plus systemic complications. This equilibrium is dependent upon several factors: 1, virulence of the micro-organism; 2, pathogeneticity of the micro-organism; 3, general body resistance; 4, local tissue resistance.

Cultures from supposedly normal throats will show a variety of organisms; diplococci of catarrhal and pneumococcic types, bacilli, streptococci, spirochaetes, and leptothrices all of which may vary from their normal morphology.

The tonsil being placed as it is in the upper respiratory and alimentary tracts, its exposure to bacterial invasion is hazardous. In the prevention and cure of disease, the tonsil therefore becomes a subject of serious economic concern.

Therapeutics.

The remainder of this paper will be devoted largely to a consideration of therapeutics.

The treatment of infective tonsillitis may be either internal medication, local applications, or surgical, or a combination of these measures. It is to the first of these that I wish to give most of my attention, for in the homœopathic remedy we have a decided advantage over physiologic therapeutics. In looking over several old school texts, I find little recommended other than calomel purges, quinin, iron, perchlorid, and aspirin internally, except the local cleansing and astringent applications. In one text, however, aconite and belladonna were depended upon somewhat.

We consider Acute and Chronic Infective Tonsillitis. Acute forms: 1, follicular; 2, peritonsillar; 3, ulcerative; 4, membranous.

Acute Follicular Tonsillitis may be caused by several pathogenic bacteria, including streptococcus pyogenes, staphylococcus, pneumococcus, and leptothrix. It is most common in young adults, at times in children, and occasionally in people after forty. W. E. Phillips says (Ed. 1911, p. 699): "There is an acute throat infection involving either the pharynx or tonsils, entirely due to streptococci, which is undoubtedly a streptococcemia and is not usually mentioned in textbooks. The author has observed two cases in children, eight and ten years old, respectively. Both developed septic endocarditis. The

systemic condition yielded only after three weeks, and both made a good recovery." This, undoubtedly, was the type of septic sore throat occurring in Ann Arbor, Michigan, during the last three years. The Michigan epidemic was caused by a very virulent strain of streptococcus.

R. R. Mellon (*University Homoeopathic Observer,* April, 1914) reports on this epidemic, showing the results of autogenous vaccines. This was during my service in the Univ. Hospital Homœopathic, and I saw most of these cases with Dr. Mellon. The early diagnosis made possible by Dr. Mellon's cultural methods in differentiating the infection from pneumococcic and diphtheritic throats is almost essential to satisfactory vaccine therapy.

Dean W. Myers is reporting further on these epidemics.

In the epidemic of last year (1914) I treated a series of about twenty-five cases in the private practice of Dr. Myers, using the indicated remedy and topical applications only. Merc. bin. iod. 2x was the remedy most frequently prescribed, with hot saline gargles frequently—every hour at first—and hot alcohol 30 per cent gargle q. four hours to free the accumulation at the mouths of the crypts. Most of the cases were able to be out of bed in three days. The more severe cases were abed for a week. Gelsemium Ø to 3x. Eupatorium perf. 3x, Phytolacca 3x, and occasionally Belladonna 3x in the first stage, were also indicated at times. It is pleasing to refer to these good results in comparison with the less satisfactory treatment of cases by our brothers of the other school.

Other remedies useful in this follicular tonsillitis are: Aconite in the early stage when the fauces are red, dry, and feel constricted. The face is red, there is anxiety, a coated tongue with thirst; heat aggravates.

Ammon. Mur. in phlegmatic temperaments having swollen tonsils that throb and are covered with phlegm.

Apis mel. is indicated in the early stages marked by great oedema of neighboring tissues. The tonsil is swollen and pale rose-red in color. There is no thirst and heat aggravates.

Belladonna has a florid face, is hypersensitive to external influences, has a mulberry tongue and bright red tonsils very sensitive to touch. There is thirst but frequent inability to swallow due to pharyngeal spasm.

Guiacum either internally or as a gargle will relieve many dry, burning, swollen throats.

Merc. iodid, used so satisfactorily in the before mentioned epidemic, has dark red, swollen tonsils with lacunar spots over the crypts. I use the Ruber in deep involvements and Flavus in the more superficial type, rather than following the text-book left and right indications.

Acute Peritonsillitis has much the same etiology as the follicular form. The infection seems to involve more the superior crypts, which are often covered by the plica supra-tonsillaris and therefore not drained so readily. The infection is mostly unilateral and occurs in young adults, perhaps in cases previously having had follicular tonsillitis with resulting adherent pillars.

If the case is seen early, abscess may be averted by internal remedies; if pus is evident the treatment is surgical drainage through an incision made in the anterior pillar and carried between the tonsil capsule and superior constrictor upon which it rests, never into the tonsil itself. Proper after-cleanliness usually clears up the case. These tonsils should be removed later.

The following remedies together with hot alkaline gargles and the application of heat to the affected cervical areas will usually resolve the condition before suppuration ensues:

Apis. mel., in the marked oedematous cases. Hepar. sulph., where there is more soreness and less oedema. Lachesis, in the dark red, swollen throats with the accompanying constricted sensation about the throat and heat aggravation. Mercurius, in dark red, putrid throats; flabby, foul tongue and stitches to the ear on swallowing; pus already formed but not palpable. Silicia, in periodical attacks from exposure to cold in which there is pricking pain in the tonsil and parotid and cervical glandular enlargement.

Acute Ulcerative Tonsillitis is caused in most cases by Vincent's bacillus or spirillum. Other factors are lowered systemic resistance, local irritative lesions, pyorrhoea alveolaris, and syphilitic and tubercular lesions. The ulceration is confined in the beginning to one side; is superficial in character, and not very painful considering the nature of the lesion. The ulcer tends to spread and may invade the soft palate and sometimes the other tonsil. A psuedo-membrane frequently covers the ulcer and must be differentiated from syphilis and diphtheria.

Rapid results in the treatment of this condition is seldom accomplished. The best dietary and hygienic care is essential in order to fortify the general resistance. Local cleanliness by sprays and gargles, and cautery by galvanism, silver nitrate, iodin, or the caustic acids will prevent extension and stimulate repair. These measures will be aided very materially by the indicated remedy.

Apis. mel. ulcer has an angry red margin and is covered by a leathery membrane.

Ferr. phos. ulcer is bleeding, the blood not degenerated.

Hydrastis ulcer is shallow and excoriated, and covered with tenacious mucus.

Kali bich. ulcer is deep and punched-out in appearance and covered with a pseudomembrane.

Lachesis ulcer is dark red and covered with clinging mucus and decomposed sanious exudate.

Lycopodium has ulceration starting on the right and spreading to the left tonsil, there is dysphagia and regurgitation, occurring in conditions of low vitality.

Merc. iodids have superficial soft-edged patches, foul tongue and glandular swelling.

Nat. sulph. has shallow ulcers following vesicular formation in hydrogenoid constitutions. The discharge is thick, tenacious and yellow.

Nitric acid has bleeding, fissured ulcers which are painful, splinter-like, usually syphilitic in origin.

Sanguinaria has eroded shallow ulcers giving a burning or scalding pain.

Acute Membranous Tonsillitis may result from the extension of membranous pharyngitis or laryngitis. There are two forms recognized etiologically, diphtheritic and non-diphtheritic or idiopathic. The latter occurs in children where there is a condition of lowered resistance, or from local irritations from one cause or another. A membrane is present which is more easily removed than in the diphtheritic form. It is non-contagious, otherwise the treatment is the same in general as for diphtheria.

Arsenicum alb. has a dry, wrinkled membrane. Carbolic acid has red fauces covered by putrid exudate, marked burning. Kali

bich. has a tough, stringy pseudomembrane, oedematous palate. Lac caninum has a glazed deposit with symptoms repeatedly changing from side to side. Lachesis has a blackish membrane of serum and degenerated blood elements. Merc. corr. and Cyanatus have raw areas that are very sensitive and covered by necrotic (Cyanatus) exudate. Mur. acid has dark red, painful fauces with a pseudomembrane, tongue dry and leathery. Tarentula cubensis, similar to Lachesis, is indcated in "pain of death."

Chronic Tonsillitis is divided into two classes, Hyperplastic and Lacunar. These are really to be considered as chronic infections and are the kind of tonsils that keep the door open for systemic invasion by pathogenic bacteria.

Chronic Hyperplastic Tonsillitis is most frequent in children and usually the result of previous acute exanthemata, acute fevers, grippe, frequent colds, and chronic inflammatory involvement of the upper respiratory tract. The hyperplasia may be either in the follicles or in the connective tissue stroma. This produces chronically enlarged tonsils of various sizes, often having adherent pillars harboring infection. The treatment is surgical complete removal.

Chronic Lacunar Tonsillitis is most frequent in adults and follows acute follicular tonsillitis in which the infection had its chief action in the crypts. Chronic infection of the upper respiratory tract and chronic peritonsillitis usually accompany it, and doubtless contribute frequently to its maintenance. These tonsils are usually enlarged, but the chief danger lies in the accumulations held in the crypts and consisting of tissue detritus, particles of food, and microorganisms. The pillars are more frequently adherent than is the case in the hyperplastic variety; infection is thus harbored and putrid breath the rule. The treatment is complete surgical removal and more imperatively so than in the other form. Phillips gives the following indications for removal of chronically infected tonsils: 1, recurrent acute tonsillitis; 2, faucial obstruction; 3, recurrent and chronic otitic involvement; 4, impairment of the voice; 5, systemic infection; 6, anemia, cough, bronchial affections, arrest of development; 7, enlarged cervical glands.

I wish to protest against the license that is too frequently assumed by men of inexperience or unqualified surgical ability in attempting

surgery of the tonsils. If my experience has taught me anything, the removal of tonsils is a tedious procedure and to be undertaken with the same seriousness as other capital operations. Permanently disfigured fauces, impaired voices, and lacerated eustachian ostia are evidences of improper results.

In those cases where an operation is not done for one or another reason, we have some remedies that commend themselves. Aurum Metallicum, Barium Iododum, Baryta Carbonicum and Iodiodum, Calcareas, Hepar Sulphur, Phytolacca, Silicea, Sulphur, Thuja and Tuberculinum, for which indications are well given in Jousset's Practice, Translated Ed. 3, p. 634.

What a Man Speaks From He Speaks To.—People who have no convictions, but only prejudices, often manifest a psychological attitude—which, however, is not confined to them. When a certain mental attitude is very strongly accented, one is inclined to feel that such individuals possess in their sub-consciousness a type of reversed feeling to the one that is active in their consciousness. For instance, the excessive prude is likely to be at heart a sensualist; the man who can never give others the credit for telling the truth is likely to be himself a liar; a man who insinuates, "How much did he get for it?" should be asked, "How much would you have asked for it?" Dr. Ralph Reed, *The Critic and Guide,* January, 1915.

Suspect the morality of the person who is ever ready to impute immorality.

Bulgarian Lactic Acid Bacilli for Trachoma.—Powdered tablets dusted upon each everted lid twice a day, says Dr. C. K. Hudgee in *Northwest Medicine,* are an excellent remedy in trachoma. He reports three severe cases of long standing practically cured by this treatment, with one per cent. atropin once daily and hot fomentations thrice daily as adjuvants. The lids may be scarified thoroughly once or twice during the course of this treatment, which should be kept up for two or three weeks.—*Critic and Guide,* January, 1915.

DIPHTHERIA

A Consideration of Its Diagnosis and Rational Therapy

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N considering a subject of this sort it is a matter of interest if not of scientific importance to look into the antecedents, the past history of the infection, merely to note the evolution both as regards the knowledge of the disease and its rational therapy.

This infection has been one of the scourges of nations in the past, ranking with syphilis, smallpox and bubonic plague. In view of its antiquity it has received various names, such as Egyptian Disease (Morbus Aegyptiacus) and Morbus Syriacus. Spanish physicians called the disease Garotillo. The name Strypsjuka (strangling disease) was applied by the Swedes. The great French physician, Pierre Bretonneau, after studying the disease in all its clinical manifestations and observing the constancy of membrane formation, gave it the name "diphtheria." Due to the fact that the Scotch gave the type of disease characterized by suffocative attacks the name "croup," there was for many years confusion as regards diagnosis. Later works along bacteriological lines showed the infectious nature of the "membranous croup," so-called, and its diphtheritic nature.

Scientists were in the dark as regards the causative agent of the disease until Klebs discovered a peculiarly shaped bacillus in the membrane of diphtheria cases and Loeffler, in 1884, succeeded in cultivating the same bacillus from the pharyngeal membranes.

After the growth of the organism artificially, Loeffler found that the organism produced toxin and was able to isolate it. Roux and Yersin, working with the toxin, were able to demonstrate on animals the effect which it had in producing the various paralyses and parenchymatous degenerations common to diphtheria.

It was from all of these studies that knowledge of diphtheria toxin took shape, paving the way for the development of the antitoxic serum which Behring first used therapeutically.

It is not the writer's province to go deeply into the bacteriology of the organism. As regards the cultural aspects of the organism in diagnosis, a glucose serum agar is the best medium for growth, the colonies appearing within a few hours. The colonies have a dull surface and are pearly white or yellowish in color. The organisms are club-shaped bacilli, 1½ to 2 microns long and .3 to .5 microns thick, more rarely not being clubbed. The organisms are non-motile and stain readily, the best stain the Loeffler's or alkaline methylene blue. They take the stain in a peculiar manner, showing alternate segments of darker and lighter staining. Minute dots or polar bodies appear usually at the ends of the bacilli, showing a most intense staining.

While not advocating dependence on the bedside diagnosis of diphtheria, the writer will have to admit that in the presence of a tonsillar, pharyngeal or nasal membrane, especially the latter, a relatively sure diagnosis may be made. That is, however, when the infection is a pure diphtheritic one, uncomplicated by the presence of a mixed infection with virulent streptococci or pneumococci. For diphtheria, in contrast with other infections, usually is more asthenic, the temperature is usually not high, and the exudate tends to spread and invade areas that other infective agents do not involve.

Exudates due to streptococcic or pneumococcic infection are usually confined to the tonsils. The exudate of a Klebs-Loeffler infection may involve simultaneously the tonsils, pillars, soft palate, uvula and post-pharyngeal wall. It is well to remember, however, that in secondary and tertiary syphilis, febrile symptoms may be present, and that the mucous patch or breaking down gumma may involve the soft palate and pharyngeal walls, closely resembling the throat of diphtheria. In such a case, the clinical picture is not sufficient for a diagnosis. A careful taking of the history and examination, however, will usually reveal the presence of syphilis.

What, then, are the usual prodromal symptoms of diphtheria?

They are, primarily—malaise, slight elevation of temperature, difficulty and pain on swallowing. The elevation of temperature is usually 99.8 to 102. The malaise becomes more pronounced, the pain on swallowing greater, and on examination of the throat one finds usually a membrane in it, either beginning or already fully formed, involving one or both tonsils, or the soft palate, uvula or post-

pharyngeal wall; ragged, yellow or grayish and varying in tenacity and thickness according to the duration or virulence of the infection. In the hemorrhagic variety, hemorrhage under the membrane causes it to become a grayish-black in color. Much has been made of the toughness of the membrane, of its difficult removal, and the attendant bleeding which occurs when it is stripped from its area of attachment. Too much dependence must not be placed on that one feature, for the well-developed exudates of virulent streptococcic throat infections are often so firmly attached and the underlying mucosa so injured by the bacterial toxins that their removal is sometimes difficult and attended also by bleeding. If the case is seen late in the progress of the infection, the toxemia may be apparent, as manifested by softness of the pulse and its rapidity, often by a gallop rhythm. Frequently the rate is pathologically slow. The pallor of the patient is sometimes a very noticeable feature. In children with pharyngeal or laryngeal diphtheria and a large amount of exudate, the fight for air and signs of impending asphyxiation are very significant.

This is all the writer can say regarding the bedside diagnosis of diphtheria. Occasionally, it is true, one sees the patient when the infection is in full bloom, so to speak, but the vast majority of cases are seen earlier, when all that may be apparent is an inflamed throat with a beginning exudate. There is where confusion arises. Is the case one of simple tonsillitis of streptococcic origin, or is it a beginning diphtheria? Careful observations may leave the diagnosis unmade. The symptoms may be those of a simple pyogenic infection. Are you going to stop there, taking for granted that you are right, telling the anxious relatives of the patient that it is only a sore throat or tonsillitis? Are you going to wait until the patient is absolutely toxemic or until the membrane has rapidly spread so as to mechanically endanger the patient before yielding to a diagnosis of diphtheria? Or are you going to the other extreme and diagnose every case of tonsillitis with exudate—diphtheria? There was a time, certainly, when one had to be cautious about a diagnosis of diphtheria, and hesitation meant a high mortality, a greater morbidity and more post-diphtheritic complications.

There is another feature in the treatment of cases of diphtheria which should be discussed here, as it bears close relation to the initial

diagnosis of the case: How long should a patient recovering from diphtheria be isolated after the disappearance of the signs of the infection? Granted the fact that the case is true diphtheria, when does the doctor know that the case is safe from reinfection or free from danger of infecting others? These are the problems confronting the physician who is content to diagnose diphtheria at the bedside, for if he guesses at the diagnosis he will certainly have to guess at the time when the infection has spent itself.

What, then, is the point of this argument?

Just this: Diagnose your throat cases always by the aid of the microscope. By all means examine the smear from the throat microscopically, culture it on serum agar if you have it or can possibly secure it, and send it to the nearest bacteriological laboratory with urgent request that a diagnosis be returned at the earliest possible moment. It is far better if you have a microscope and can examine the throat smear yourself for the presence of the Klebs-Loeffler bacillus, at the same time forwarding a throat smear and culture to the nearest laboratory, thus controlling your mistakes. In this way much time will be saved, and time is a valuable element in the initial stages of a diphtheritic infection. You also have a permanent record of your case in the form of the stained and mounted throat smear. This is the way doubt may be eliminated in a difficult case. Just an instance will illustrate this.

One morning, a couple of summers ago, in the course of his office work, the writer had two patients come to him, one a young boy, the other a young woman serving in the kitchen in a near-by hotel. They were both in the office at the same time. They showed two beautiful cases of tonsillar infection with much exudate; the boy's involving both tonsils and pillars, the young woman's involving only one tonsil. As far as could be determined, they were alike as to color at that time, but later becoming different. Both manifested a considerable degree of malaise and pain on swallowing; temperatures were about 101 degrees, with pulse corresponding. There were no cases of diphtheria known to be in town. As far as one could determine, they looked to be identical cases of severe mixed streptococcic or pneumococcic infection. Smears and cultures were taken from both cases. The results of the examination of the smears were startling

and clearly showed what the results would have been if the clinical diagnosis of streptococcic tonsillitis had been adhered to. The boy's throat showed an immense number of staphylococci, plenty of streptococci, but no diphtheria bacilli. The smear from the young woman's throat was practically pure Klebs-Loeffler bacilli. There were, in fact, almost no other micro-organisms seen. The culture affirmed the diagnosis with the additional information that the organisms were a very virulent type. What the result would have been had the girl persisted in her work, handling dishes and food with the virulent throat infection which she had, it is hard to imagine.

The incident serves to show the chances which one takes, both with his reputation as a physician and with human life when he tries to diagnose throat infections with the use of a microscope, given the ability to use it with assurance in bacteriological work.

The pathology of this infection (and, by the way, this paper is devoted to a discussion of the infection of the respiratory tract) hinges upon one fact alone, and that is the ability of the organism to produce large amounts of virulent extra-cellular toxins. This elaboration of toxins results in local tissue injury, inflammation, and exudation with the formation of a closely adherent fibrinous membrane—a true diphtheritic exudate in the pathologic sense of the term. The patient so infected is subject to a two-fold danger: the toxemia arising from the absorption of the toxins and, secondly, the mechanical obstruction of respiration by the rapid increase and spread of the membrane to larynx and trachea.

Briefly speaking, the effect of diphtheria toxin is manifested on (1) the nervous system, (2) the circulatory system, (3) the parenchyma of the excreting glands and (4) the muscular system. Upon the nervous system the toxin has a profound effect. This is sometimes manifested by the neuritic involvement of the oculomotor nerves, with the subsequent loss of function, as shown by inability to fix an object. The branches of other motor cranial nerves suffer from the effects of the toxin, paralysis being the result of the neuritis. This is especially noticeable in case of the palatine and pharyngeal branches supplying the muscles of the throat. The signs of this paralysis are: difficulty in swallowing and the regurgitation of liquids through the nose. Another nerve often involved is the vagus. The result is tachycardia.

The nerve plexuses and cardiac ganglia may be involved, the result being irregularities in the cardiac rhythm and a bradycardia. Death may result from the so-called paralysis of the heart. As a result of the toxic action on the motor tract of the spinal cord and the motor nerves leaving it, paralysis of the various muscles of the upper and lower extremities may occur. Muscular atrophies occur. As a result of the neuritis, the patellar reflex may be lost. The portion of the circulatory system which bears the brunt of the diphtheria toxin is the cardiac muscle. The toxin coming to it in the blood-stream has a very decided effect, producing a cloudy swelling, and later a fatty degeneration of the muscle. The result is, first, an insufficiency, relative, of course, of the mitral valve, a failure to hypertrophy, and, as a result of the weakened muscle, cardiac dilatation.

The parenchyma of the kidneys and liver especially suffer as a result of the toxemia. The tissue shows at first a cloudy swelling, followed later by a fatty degeneration. The kidneys are usually more affected than the liver. Acute parenchymatous nephritis is by no means a rarity as a complication of this disease. A very severe case was seen by the writer this summer, closely following upon an attack of diphtheria in a small child of about six years.

The disease sometimes winds up with an infection of the accessory sinuses of the head, especially the maxillary sinus. The result of this is that the patient is left with a persistent watery nasal discharge, which is loaded with diphtheria baccilli, and he becomes a diphtheria carrier capable of infecting any susceptible person. This is a really serious complication as judged from the standpoint of the community, and it may result in a serious epidemic very easily.

It seems unique, when one stops to consider, that the very feature of the infection which has produced all the morbidity and the high death rate of diphtheria—the ability to produce a powerful toxin—has been the means of evolving an agent which has so greatly reduced both the death rate and morbidity of the disease. By this I refer to diphtheria antitoxin. Without going into details, for the benefit of those who do not know this it should be explained that antitoxin, specific antibodies to infection, can only be developed to a high degree in those cases in which the organism is capable of elaborating an extracellular toxin. This, a filterable toxin which can be separated

from the organism itself, is manufactured by the organism and thrown off. Most organisms produce intracellular toxins or toxins not easily separable from the bacterial protein, but very few produce extracellular ones, and the diphtheria bacillus is pre-eminent in this respect.

So it has been made possible by the repeated injection of this toxin into horses, to render them highly immune to the toxin. Their blood serum containing the immune bodies in great amount, the antitoxin which all are familiar with, is thus of the greatest value in combating the toxemia of the infection and averting the terrific complications resulting therefrom.

The first feature, then, of a treatment which should come to you after the diagnosis of a Klebs-Loeffler infection, is antitoxin. Even if you are doubtful, do not be afraid to give an injection of the serum. Especially is this true of a suspected laryngeal infection. The earlier the serum is injected, the less the chance of cardiac, renal and neuritic complications developing. When one stops to consider the fearful possibilities of a neglected diphtheritic infection, sequelae which may forever impair the individual's efficiency, an everlasting monument to someone's neglect, it seems hardly possible that there exist today physicians so dense and bigoted as to deny the value of antitoxin.

Inasmuch as the greatest number of deaths from diphtheria occur in cases not treated before the fifth day, it is very apparent that treatment should immediately be instituted as soon as the case is diagnosed.

The dosage which should be employed is 2,000 to 3,000 units in ordinary diphtheria to a child one year, or older; 3,000 to 5,000 units in severe laryngeal cases; 1,500 to 2,000 units to an ordinary case in a child under one year.

The dose may be repeated within twelve hours if there are no signs of improvement, and even a third dose may be given in the twenty-four hours.

The effect of the antitoxin will be to cause a decrease in temperature. The membrane will begin to whiten, become swollen and ragged at the edge, finally peeling off.

Especial care should be taken that the catarrhal cases with no exudate get antitoxin. The development of toxic symptoms is possible after the membrane has disappeared, so that the case should be watched and an occasional dose of antitoxin given until the throat smear is

negative and there is no evidence of sinus infection apparent.

As for the possibility of an individual being sensitized to horse serum, one need not worry. The urticaria resulting from the injection is uncomfortable, but not especially dangerous. It usually occurs after an unusually large dose of serum; also if the individual has had an injection some little time before. This, in a way, serves to render the individual somewhat sensitive to the protein of horse serum. This can be readily ascertained, however, by injecting a small amount of the serum with an ordinary hypodermic syringe and observing whether there is any reaction. If there is any reaction caution can be observed in not giving the maximum dose and trouble can thus be avoided. However, after a small injection of that sort one can be reasonably certain that there will be no reaction. The small initial dose has used up the bodies immune to the foreign protein, and if now a larger dose is injected, it will not be digested or split up rapidly and so no reaction will occur.

In the internal treatment of the disease, homoeopathic remedies find many indications, and form the ideal adjuvant to the serum treatment. Only the more important remedies will be spoken of in their and on their specific indications.

Of the salts of mercury, the cyanid, biniodid and protoiodid have been used most in throat infections.

Merc. cyanatus has been used in the most malignant types of the disease with success. There is extreme prostration with membranous involvement of the nasal cavity. The membrane, white at first, later is dark, gangrenous and of a very offensive odor. The breath is very offensive, tongue large, flabby, showing the imprints of the teeth. Nasal hemorrhage may occur. Cervical glands are usually swollen.

The other mercural salts (the proto- and biniodid) are indicated in the milder diphtheritic infections with the usual mercurial symptoms, tonsillar and pharyngeal membranes large coated tongue, fever, swollen glands, dysphagia, offensive breath, etc. With the protoiodid, the tongue is coated yellow, with red tip and sides. The throat symptoms are worse on the right side. With the biniodid the throat symptoms are worse on the left side. The fever is greater and there is more glandular involvement.

Arsenicum: Slight fever, fetid breath, membrane dark and gan-

grenous. Pulse rapid and weak; patient restless, prostrated, throat swollen; mucosa of throat edematous; persistent burning may be present; involvement of kidneys with general anasarca; waxy skin; puffy eyes; albuminuria. Patient is thirsty and drinks often.

Lachesis: The patient is flushed or cyanotic; very hyperesthetic. Has a constricted feeling about the throat which is characteristic of this drug; all symptoms are worse after sleeping. Patient in his delirium is very loquacious. The tongue is dry, protruded with difficulty and trembles; is cracked at the tip and is brown; swallowing is difficult. Patient greatly prostrated. Cervical tissue greatly infiltrated. Odor from throat very offensive; discharge of thin, watery mucus from the nose. Hemorrhage of dark fluid blood from nose is common.

Potassium: The salts of potassium, especially the muriate permanganate and bichromate, have been very useful in the treatment of diphtheria.

Kali muriate: Indicated in diphtheria with swollen throat, painful glands, follicular exudate, deep ulcers on tonsils and pharynx with yellowish base.

The characteristic of *Kali Permanganate* is great fetor referable to the throat.

Kali bichromicum: Is serviceable in the latter stages of the disease when membrane has ceased to extend; exudate tough; tongue yellow coated or dry and red; pain from throat extends to neck and shoulders.

Apis: The characteristics of this drug in diphtheria are edema of the glottis and throat with renal complications, suppression of urine, pale, waxy skin, albuminuria, general anasarca.

In case of very severe depression or collapse, active measures must be instituted. Whisky, brandy and camphor are good, and should be given by mouth, hypodermically, or by rectum.

In heart complications *digitalis* or *strophanthus* may be efficient. Aside from the serum therapy homoeopathic therapeutics will meet about all the indications of the case.

In treating the disease locally, some employ an antiseptic spray for the nose and throat, such as hydrogen peroxid, Dobells solution, weak solution of bichlorid of mercury, etc. A seemingly efficient spray and gargle is Chinosol in 1 to 500 solution. The membrane rapidly decreases in size with the use of this antiseptic. Others employ an

antiseptic nasal irrigation, the pharynx being treated similarly. Of recent years, the spraying of the nose and throat with broth cultures of living lactic acid bacilli has been advocated and tried by some, with seemingly very good results. This mode of local treatment presupposes that no antiseptics are to be used in the throat.

As most of the complications were spoken of in discussing the pathology of the infection, it will be necessary to mention but few of them here. Membranous involvement of the larynx, mechanically obstructing respiration and necessitating intubation, has been very ably discussed by Dr. Cushing in the January number of this Journal. Acute parenchymatous nephritis may occur in the latter stages of the disease and in the first weeks subsequently. The condition should be treated as any acute nephritis is.

Heart lesions—endocarditis, myocarditis, heart clots and dilatation—often occur in cases not treated by antitoxin; more rarely in cases treated by antitoxin and in those usually where a diagnosis has been slow in being arrived at.

The same can be said of the cases of neuritis, cardiac and other diphtheritic and post-diphtheritic paralyses. Where treatment is instituted promptly after a reasonably speedy diagnosis is arrived at, we can be reasonably certain of a freedom from complications due to the toxemia. Of course, there are some malignant cases of mixed infection which no treatment will save.

Broncho-pneumonia is an ever-present complication of diphtheria, as shown by autopsy, and may be an important factor in increasing the mortality of the disease, especially in the young.

In conclusion, the writer wishes to convey to the reader something of his inability to do anything more than to hit the high places, so to speak, in a discussion of such a subject in the limited amount of space necessarily allotted to him.

The points which he wishes to drive home are: first, that an early, microscopic diagnosis and, secondly, a rational therapeutics, applied by each and every one who lays claim to the title of physician, will necessarily lower still farther the mortality of that ancient scourge of children, diphtheria!

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INFLUENZAL INFECTIONS OF THE NOSE, THROAT AND EAR

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INFLUENZA, as an infection of the nose, throat and ear, in many instances does not come to the rhinologist or otologist at its outset, nor until what is thought by the general practitioner or the laity to be merely a simple acute rhinitis presents some unusual or severe symptoms; for intsance, those that accompany involvement of one or more nasal accessory sinuses or a violent pain in the ear.

Two prominent factors associated with pathological changes in a later period of the disease, after the acute local and general symptoms have disappeared, are a persistent purulent discharge from the nose (sinus empyema) with probably a headache; or a discharge of pus from the ear, with or without pain or markedly impaired hearing. As a consequence, a number of these patients are afflicted with obstinate and even fatal complications that might have been avoided had they received the proper attention early.

The upper air passages are the undisputed mode of entrance of the influenza bacillus (bacillus of Pfeiffer). It is found in a large proportion of noses and throats during the winter months, and in greater abundance during the prevalence of colds in individuals. That the disease is a highly contagious one is evident by the way it often attacks every member in a family, and on some occasions a second time, making complete isolation necessary before it can be eradicated.

Influenza frequently starts as a primary rhinitis (catarrhal grippe) and also, as a sequence to a simple acute rhinitis. Again, its route may be by way of the tonsils or pharynx. The function of the influenza bacillus is almost entirely a primary one, forming a favorable medium for incubation of other micro-organisms—the staphylococcus pyogenes aureus and albus, streptococcus pyogenes, diplococcus pneumoniae, erysipelatus and others. These micro-organisms soon destroy the influenza bacillus, causing a secondary

infection and the numerous sequelae that will be mentioned later.

The importance of early conclusion as to whether the condition is a simple acute rhinitis or an influenza rhinitis has previously been hinted, and that this is no easy task at times is to be admitted. How can this best be accomplished? A glance at a few of the more common symptoms may aid us.

Influenza Rhinitis	*Simple Acute Rhinitis*
General Symptoms:	General Symptoms:
Sudden onset, with a usually high temperature.	Onset; though rapid the symptoms are milder and not so sharply outlined.
Cold feeling.	
Profound prostration and weakness.	A slight febrile reaction which is almost simultaneous with the local manifestations.
Pain in head, back or extremities.	
Local Symptoms:	Local Symptoms:
The attack is violent from the start, and remains so all through its course.	Begins usually as a full feeling in the nose.
Primary invasion of the sinuses is surprisingly constant.	Primary infection of the sinuses not frequent.
There is a rapid involvement of the middle ear with great pain and marked impairment of hearing.	Involvement of the ear includes a feeling of fullness with an occasional slight earache, and impairment of hearing less marked.

The watchwords, then, for influenza are: violence and quick action. No better example of this need be offered than its sudden deep-seated invasion of the mucous membrane of the nose, causing it to become greatly swollen and red, with here and there hemorrhagic areas, and epistaxis; following rapidly the mucous membrane has a succulent or polypoid appearance due to a clear secretion coming from an already involved sinus. The latter is also indicated by severe pain in any of several localities, supraorbital, infraorbital, at the root of the nose, in the occipital region, etc.

This serous, or sero-mucous secretion is usually coming from the middle meatus; shortly the picture will be changed to a distinctly outlined stream of purulent discharge emanating from the ostei of one or more of the sinuses, flowing either over, from under, or posterior

to the middle turbinate; should the secretion be so profuse that it spreads over the nasal cavities, it is thoroughly removed and the patient instructed to sit a few minutes with his head dropped forward on the chest. If secretion is present in this short time it is from the sinuses and can be seen in the characteristic narrow stream as described above. On the other hand, the discharge from the sinuses may never become strictly purulent.

Anosmia is an important sequel, either from pressure of the swollen parts in the middle meatus upon the olfactory nerve endings by being crowded upwards into, or closing off the olfactory space or swelling and pressure of the tissues containing them. Associated with this may be a depressing bronchial asthma. To illustrate: The author has in mind a nurse in the West Philadelphia Homoeopathic Hospital, who last winter had such a violent sinustitis following an attack of grippe that the parts in the midde meatus could not be outlined and the parts above were closed from view. Anosmia was complete, and associated with it was a well established bronchial asthma; these two symptoms are still present in part, mainly because she refused proper treatment.

Cacosmia is sometimes present along with suppurative sinusitis.

The *Pharynx*, when involved, is painful and red, with numerous globular lymphoid thickenings, with from one to a number of small round, yellowish spots on the follicles; later there appears in rare instances one small, shallow, grayish ulcer (or herpes) about the size of a little finger nail on the post-pharyngeal wall. It is annoying but not painful, and vanishes in a few days.

The *Tonsils* become intensely red, swollen and painful; many yellowish-gray islets of the lacunar and follicular types are usually present, with a peritonsillar abscess as a frequent complication.

Larynx. Here we have severe pain and hoarseness, and with the laryngeal mirror is seen a larynx intensely red around the arytenoids, ventricular bands and vocal cords; the latter are also rounded and thickened. The hemorrhagic feature is also frequently found with this, and later the epithelium of the inter-arytenoid space becomes thickened (pachydermia).

That the *Ear* is particularly apt to be invaded by influenza, though rarely as a primary infection, is in accord with the opinion of the

writer and others; following the nasal infection in rapid succession will be experienced an intense pain in the ear, indicative of an otitis media, which belongs to the most violent group and almost always becomes suppurative either from the start or in the course of a few days. The membrani tympanum is of a deep red color and often contains small purplish bullae (hemorrhagic) and the entire membrane is bulging enormously; or there may be either anterior to the malleus, but usually in the posterior superior quadrant, the characteristic nipple-like bulging, on the crest of which appears the perforation. From this will be noticed the escape of a blood-tinged serous or sero-purulent exudate. This blood-tinged secretion, together with the purple bullae on the external surface of the membrana tympani, reminds us again of the virulency and deep-seated action of the disease. When there is a marked general bulging of the drum membrane it indicates increased resistance of this organ, and a paracentesis should be done early to relieve the patient; the exudate will become a thick yellow pus in from one to three days, and continues from a few days to three weeks, and even for months.

Furunculosis of the external canal, acute suppurative mastoiditis and subperiosteal abscess are frequent sequelae to involvement of the middle ear, while the labyrinth is seldom attacked.

The intracranial complications include meningitis, perisinus abscess, sinus thrombosis, cerebral and cerebellar abscess; other complications being cerebrospinal meningitis, erysipelas, bronchitis, pneumonia peri- and endocarditis, nephritis, etc.

With the intention of adding interest to this paper the writer will relate a few cases and include the histories of several others that have come to his notice in the last month; these will show something of the contagious character and complications of influenza.

1. Includes an entire family. The father was first to become ill; the disease concentrated its forces upon his tonsils and pharynx. Next, a twin girl, four years of age, began with a rhinitis, and following in order were tonsillitis, laryngitis and broncho-pneumonia. Before she recovered, her twin sister was attacked in the same way with each complication and in exactly the same order, but less severe.

While this child was ill the mother was seized with a severe rhinitis, with involvement of the sinuses, tonsils and ear. Strangely

enough, the invasion of the ear was very mild. During the father's illness the maid became ill; her history is the following (abbreviated):

2. January 12, 1915. Evening. Miss B. L., age 16 years. Three weeks ago caught cold while playing in the snow; this subsided, with a recrudescence one week ago. Yesterday she became worse; had a chill, which was followed by sweating, fever and severe backache. After retiring at night she began to have sharp, shooting pains in the left ear. This pain is constant today.

Otological examination showed a red, bulging drum membrane and a small amount of blood-colored serum. A paracentesis had been done eight hours earlier, with relief of pain but little improvement in hearing. This morning the throat felt sore.

Examination—Both tonsils red and swollen; one white spot on the right tonsil and a number of these on either side of the pharynx behind the posterior faucial pillars; pharynx red and contains a number of lymphoid swellings, etc. *Nose*—Entire mucous membrane is red and covered with a purulent secretion, which when thoroughly cleaned out revealed a stream of pus coming from under the anterior end of the right middle turbinate. Pressure over the frontal and ethmoidal sinuses on the right side caused pain. Frontal and occipital headache were prominent symptoms.

January 15, 1915. Intense earache, the left drum membrane bulging all over, worse in the posterior superior quadrant; there is fair drainage; mastoid region slightly tender to touch, particularly over the tip, with swelling at this point and of the pre-cervical glands beneath. Relief followed a subsequent paracentesis, the tenderness of the tip of the mastoid lasting for several days. At this writing all conditions have subsided except the suppurating otitis media.

January 8, 1915. M. B. S., age 11 years, female (twin), started six weeks ago with a cold, creepy feeling down the back, fever, sweating, loss of appetite, lassitude and heavy cold in the chest, with cough. Two weeks ago she began to cry with a sharp, intermittent pain in the left ear, worse at night. Four days later there was a profuse yellow discharge, with continuance of pain to this date, some swelling and pain in the mastoid region and stiffness of the neck on the same side.

Otological examination showed a nipple-shaped bulging in the pos-

terior superior quadrant of the left drum membrane from which was coming a thick, yellow, pussy secretion. The nose and tonsils had been slightly involved earlier. With ten days of treatment the suppurative otitis media was cured, the drum membrane nearly normal, and on the eleventh day her tonsils and adenoids were removed.

4. January 8, 1915. H. E. S., age 11 years, twin sister of the former patient, became ill three days later with exactly the same prodromes and for the most part the same symptoms; prostration was greater and she lost more weight; there were marked nasal symptoms. The right ear began to pain three days after that of her sister; this was followed in a few days by a serous secretion which soon changed to a thick yellow pus.

Examination of the nose showed the mucous membrane to be red and swollen and a profuse grayish secretion in the right nostril. After removing the secretion and waiting a few minutes, a distinct stripe of pus could be seen coming from under the anterior end of the right middle turbinate.

Otological examination—The right drum membrane was red, swollen and bulging in the anterior superior quadrant, with a pin-point perforation surrounded by thickened, raw-looking tissue (granular). Through this opening was coming a profuse muco-purulent discharge. By the tenth day the ear condition had completely cleared up and the drum membrane was nearly normal; but there still remains a slight discharge from the diseased sinus. On the eleventh day her tonsils and adenoids were removed.

One interesting fact in connection with these two little patients is that the father had been ill for two months with repeated attacks of influenza, and the last attack, a couple of weeks ago, was complicated with erysipelas. A brother also had a light attack of grippe, during which there was a mild sinus and ear involvement.

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THE ANGINAS OF THE EXANTHEMATA

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THE Anginas of the Exanthemata are as a rule quite distinctive, assisting greatly many times in the early diagnosis of the diseases of which they form a distinct part. In the milder exanthemata, like varicella, varioloid, Roethler or epidemic roseola, the anginal involvement is so mild that it hardly deserves consideration. Two features, however, of the last-named disease should be kept in mind by the physician—

First, the recurrence of the sore throat on the fifth day.

Second, the glandular enlargement in the neck, usually just below the mastoid, with at times, also, the involvement of the post cervical, axillary and inguinal glands. This involvement is more like hard nodes or nodules and persists for several days. Iodin inunctions, stopping short of vesication, assist in their dispersion. The throat condition in the above named diseases needs but little attention other than a mild cleansing, antiseptic gargle in children old enough to use it.

In the graver exanthemata, measles, smallpox and scarlet fever, the anginas with their complications may be of such serious import, especially in the last-named disease, and occasionally in the first, as to determine the issue of the case as to life, or a recovery so imperfect as to leave the patient afflicted and handicapped for life in the use of voice or in the sense of hearing.

In measles, catarrhal pharyngitis is an essential part of the disease; pseudo-membranous formations may occur, but are infrequent. When they do occur, instead of there being a tendency to invade the nose and ears as in scarlet fever, the tendency is to extend downward toward the larynx. These formations are usually due to the streptococcus pyogenes, and the infection is quite as fatal as that due to the Klebs-Loeffler bacillus, which may occur as a secondary infection. It is well to remember that the streptococcic and staphylococcic infection is much more apt to be present as a complicating factor in measles than the bacillary.

In smallpox, the anginal trouble is more marked in the suppurative stage of the disease and is due to the pustules in the throat. However, it is only in the extremely severe cases that the throat condition becomes alarming.

In scarlet fever we meet the severest anginas. Sore throat is an essential part of the disease and largely determines the severity of the attack. In children with adenoids and enlarged and especially diseased tonsils, we meet the severest cases. Ear complications rarely develop except in children having such throat conditions. The writer lost a case recently—the first loss in this disease in ten years—that emphasizes several points of interest. A child six years old had just entered school, the parents having neglected to have her operated for the throat condition, an unusually bad one, though they fully realized the need of attention as they had had one child operated previously for the same condition with splendid results. The throat infection spread rapidly. The pseudo-membrane, which appeared the third day, soon invaded the post-nasal, and a little later the nasal spaces. Later, the ears became involved, producing almost total deafness. A slide under the field of the microscope revealed numerous strepto- and staphylococci. No Klebs-Loeffler bacilli. Anti-streptococcic serum, polyvalent, was administered, with no results. Scarlet fever bacterin-therapeutic was used with no results. The usual therapeutic and local treatment was continued throughout the case. Contrary to the usual run of these cases the larynx became involved. The case went from bad to worse and terminated in death on the twenty-seventh day from profound toxaemia, the immediate cause of death being due to a profuse hemorrhage, due likely to an ulcerative process in the throat invading one of the larger vessels. The question might be asked, was it a case of Vincent's Angina complicating scarlet fever? I must confess that I can't answer the question, as a proper microscopical examination was not made.

In the mild anginas of scarlet fever little attention outside of cleansing solutions is required. If the child is old enough to use a mouth wash and gargle, any of the milder antiseptic solutions, like Seiler's, or boral, or listerine, may be used to advantage, and are generally in themselves sufficient. In the pseudo-membranous formations the writer likes the use of a good preparation of peroxide of

hydrogen in two to three parts of an alkaline solution—lime water or bicarbonate soda solution—used as a gargle, followed by one of the above-named solutions. In severe cases of streptococcic infection the anti-streptococcic serum is undoubtedly useful. I have seen the throat clear like magic under its use when other remedies had failed. The polyvalent serum should be used, as almost invariably the infection is a mixed one. I do not mean that every case showing pseudo-membranous formations require the assistance of the serums, but I do mean that when your well selected remedies fail to help establish a proper reaction against the invading germ or germs, serum therapy should be employed, and it will often be found a most worthy though not an infallible aid.

In the treatment of young children the writer would caution against the too vigorous use of the applicator. The denuded and bleeding surfaces may become new foci for infection, and the resisting, struggling child may, despite most earnest efforts of the physician, be left in a worse condition than before the treatment.

A few words in regard to Vincent's Angina as a complicating factor in scarlet fever. Halstead has recently called attention to the fact that the deep ulcerations occurring during and after scarlet fever and diphtheria may be from the fusiform bacillus and spirillum of Vincent, instead of from—as is usually supposed—the Klebs-Loeffler bacillus or streptococcus pyogenes. The membrane of Vincent's Angina is grey or greyish-white in color and is due to necrosis of the superficial layers of the epithelium. Its removal leaves an ulcerated spot that bleeds easily.

Dr. Wm. L. Ballenger gives it as his opinion that Vincent's Angina, either as a primary or secondary disease, is often not recognized by practitioners, and gives as a reason the fact that most laboratory men make their examination of a culture without the aid of a smear. He says the bacilli and spirilli of Vincent's Angina do not grow on the ordinary culture media and therefore a proper diagnosis cannot be made without the smear. J. Citron gives as a treatment for Vincent's Angina a trituration of salvarsan in glycerin, .1 to 5 cm., applied locally once each day for three days. Tincture of iodin, Lugal's sol., silver nitrate, chromic acid, etc., have all been used, but with varying success

VINCENT'S ANGINA

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New York.

VINCENT'S Angina is a painful necrotic ulceration of the throat. The first evidence of the disease is the presence of a false membrane, which, in a few days, gives way to distinct ulceration. In this membrane the microscope reveals almost a pure culture of fusiform bacilli and spirilla.

For only a few years has Vincent's Angina been recognized as a distinct malady. It is mildly contagious and is most frequently found in young adults. It appears either on the surface of the tonsil, or on the pharynx, or in the mucosa of the mouth. Its most frequent location is on the upper surface of the tonsil, although it may appear on the lower portion or on the soft pillars. Next in frequency it appears on the surface of the pharynx, and occasionally on the mucosa of the mouth.

When the infection occurs on the tonsil or in the mouth, one large or several small clear cut ulcers are formed. But when the infection occurs in the pharynx there are no definitely formed ulcers, but a diffused necrosis, which is very slow to respond to treatment.

In an attack of Vincent's Angina the patient is conscious first of pain in the part affected, which increases rapidly in intensity. Swelling and extreme sensitiveness to touch in the anterior cervical region develop, and frequently marked salivation simultaneously with the infection. There is also general malaise, but no rise in body temperature.

The fusiform bacilli and spirilla are sometimes found in pyorrhoea alveolaris and in seemingly normal saliva. But they do not create Vincent's Angina unless the host is in a receptive condition. I have never seen an attack in a person of robust health. It prefers for its victim a scrofulous child or a system depleted by syphilis or other wasting disease.

In appearance Vincent's Angina resembles a specific throat and at times diphtheria and may exist with either. The infection is some-

times of short duration, but more often extends over a period of several weeks.

I have found that astringent applications, such as silver nitrate and iodin, aggravate rather than relieve the condition. Mild alkaline antiseptic gargles are beneficial, and Kali bichromicum has cured several cases in their early stages. But salvarsan should be the specific treatment and in a few cases in which I have seen it used, immediate recovery has followed.

859 Seventh Avenue.

Treatment of Ozena.—Harry recommends the use of sugar in ozena. For the first week or two the physician should carry out the treatment himself, and precede sugar by removal of crusts from the nose, softening them if necessary with hydrogen dioxid or sodium bicarbonate solution. The patient should use the nasal syringe once daily. After crust removal, massage the musoca with a cotton-tipped probe; then the nostrils may be packed with ribbon gauze soaked in simple syrup, to be removed in twelve hours. Repeat this treatment on alternate days. After a fortnight the patient can insufflate powdered sugar himself.—*Critic and Guide*, January.

Incompatibility of Adrenalin and Chloroform.—Surgeons should always inform the anesthetist when they are going to use adrenalin. The anesthetist may be using chloroform, and chloroform with adrenalin is a very dangerous combination. The weakened heart-action from the chloroform, and the contraction of the arterioles from the adrenalin, cause an obstacle that the heart in its embarrassed condition cannot overcome, and a fatality sometimes occurs. Hornabrook especially warns against plugging the nostrils with adrenalin and cocain, and then following with chloroform as a general anesthetic. Adrenalin can, however, be used with ether.—*Critic and Guide*, January.

MODERN VIEWS OF SYPHILIS

Burton Haseltine, M. D.,
Chicago.

EVERYONE knows that the past decade has brought startling changes in our ideas regarding syphilis. Everyone does not know exactly what those changes are, nor how in practice we can best adjust ourselves to them. It is timely, therefore, to compare personal experiences and to discuss the clinical application of the new knowledge we have gained. The three great achievements of the decade are familiar to all; namely, the discovery and demonstration of the spirocheta pallida, the introduction of the Wassermann serum reaction and the perfecting by von Ehrlich of his therapeutic methods.

The technical consideration of these great achievements hardly comes within the scope of our specialty, but it is doubtful if any department of medicine is more interested in their results—excepting, perhaps, the venereal specialist, the eye, ear and throat man probably sees more of syphilis than any other practitioner. Also its early recognition and proper treatment upon his part will forestall an enormous amount of permanent and preventable damage. Few things are more pitiful than to see the cases of blindness, deafness and mutilation that could have been avoided if only the doctor in charge had known the quite unmistakable clinical signs of syphilis.

It is the clinical phase, therefore, that we need to emphasize. The positiveness and value of the laboratory tests are established. But they are not commonly employed until a clinical suspicion is aroused.

The primary sore is not often seen by the rhinologist, but even this is sometimes overlooked or mistaken for a simple and unimportant lesion. A more frequent microscopic study of these cases would be an improvement in our clinical habits.

It is the so-called secondary stage where our blunders begin to be humiliating. Few things are more characteristic than the mouth and throat manifestations of secondary syphilis. The symmetrical mucous patches, the dirty tonsils, the swollen cervical glands, the eroded gums, the thickened tongue, the "mushy" voice and the very *odor* of the case

are such that it would seem impossible to meet it and not think of Wassermann. And yet in the last month of the last year of that wonderful decade three such patients have been referred to me by physicians to have their tonsils extirpated! Wassermann was one hundred per cent. positive in each case. Both physicians and patients were of course pleased to learn that they could cure these conditions "without operation," but what if the narrow-minded specialist had known no more of general medicine than the internists? The removal of tonsils from a patient in the most active stage of syphilitic infection could hardly result in happiness to all concerned.

It is useless to try to teach the recognition of these conditions by writings and didactic lectures. One view of the clinical picture is worth all the books in the world. But we can teach alertness, which will lead to a more general employment of our laboratory resources. With suspicion aroused in doubtful cases, there need now be few mistakes in diagnosis.

Especially I would urge that we get away from history searching as applied to luetic cases. I would not minimize the value of the anamnesis, but there are three great reasons why these cases differ from all others in this respect. First, this is the one infection that is really hereditary, and hence the essential history may be beyond our reach. Second, the psychological situation is such that the information we derive from history-taking is as often misleading as helpful. Third, and not least important, a recognizable search for a venereal history while revealing little of value will often do incalculable harm. In the negative cases the phobias thus induced are sometimes almost as dreadful as the disease itself, while in the positive cases equal mischief is often done. Let us then, in studying what to do in the management of syphilis not overlook the vital question of what not to do.

One of the great things the serum reaction has done for us is to wipe out the more or less imaginary and the more or less misleading distinction between the secondary and the tertiary stages of syphilis.

We now know that the infection, while varying in its effects as it progresses, is a continuous one, and the principles underlying its treatment are essentially the same at all times. It is still convenient to use the terms secondary and tertiary, but with a slight change in the meaning which they convey.

Clinically, of course, the rhinologist observes a marked difference between the secondary case described above and the laryngeal faucial or nasal lesion which he recognizes as late syphilis. However, the difference is not so important as it appears, and clinically it is best to regard the disease as continuous.

The differential diagnosis of late syphilis from other lesions, such as tuberculosis and cancer, in the nose and throat at least, is usually easy. Clinically there is little resemblance and our laboratory aids quickly clear up nearly all our doubtful cases. Here also histories are, I believe, of minor importance, although the continuous watching of a case by expert observers is often of the highest value. The various so-called clinical tests are helpful, according to the degree of shrewdness with which they are interpreted. This is part of that great borderland where the general physician and the specialist may work together with advantage and where each is somewhat crippled without the other's help.

In closing I would refer again to a point in the diagnosis between syphilis and tuberculosis first mentioned by me in 1905 and now accepted by most clinicians. I will quote from my paper published at that time:

"The idea is too prevalent, I believe, that an elevated temperature, especially in the afternoon, is a necessary accompaniment of tuberculosis. A negative diagnosis is many times based chiefly upon the absence of this symptom and exceedingly valuable time is thereby lost. It is my opinion, and I believe the observation of others will support me, that there is an early stage of tuberculosis where a subnormal temperature for a portion of the day is just as constant and just as significant as is the elevation in the latter stages. This may exist for a considerable time when it only rises to normal in the afternoon, and there is no elevation at any period of the day. When we recognize the overwhelming importance of early recognition of this disease the value of this clinical point becomes apparent. For accurate observation the temperature should be taken very early in the morning, preferably before the patient takes breakfast or rises from bed."

This does not mean a slightly lowered temperature, but one that is distinctly abnormal, and other causes must of course be excluded.

122 South Michigan Avenue.

A NEW OPHTHALMOTROPE*

G. A. Suffa, M. D.,

Boston, Mass.

DURING my study and investigation of the extra-ocular muscles and their anomalies, the thought would constantly arise that an ophthalmotrope could be made that would show just how, in just what way, and to what degree the extra-ocular muscles were affected during ocular rotations, both in the normal and abnormal states.

This ophthalmotrope that I exhibit for your inspection and criticism is the result of those thoughts put in concrete form. The dimensions are six times those of the normal eye.

It is composed of a grooved base and auxiliary way, (1), **Fig. 1,** on which are mounted two movable carriers, (2), connected and controlled by racks and pinion, (3), by which a pupillary adjustment of from 2¼ inches to 3 inches can be had.

On each movable carrier a bracket, (4), is fastened. From the top of these brackets a rod extends forward, having a ball, (25), **Fig. 3,** at its termination, forming through a ball-and-socket joint a support for the eyeball. A socket and a retaining ring completes the ball-and-socket joint, (26), **Fig. 3,** that is accurately centered and fastened within the globe.

From the front of the ball-and-socket joint within each eyeball a threaded rod extends outward and penetrates each eyeball at the center of the cornea. This rod is immovably fastened to each eyeball by an internal and external nut, (5), **Fig. 1.**

I especially ask you to note that this ball-and-socket joint is placed exactly at the center of the eyeball or center of radius of the retinal curve, being convinced that a muscular mechanism so complicated structurally and neurologically, so marvellously speedy and accurately adjustable functionally, must have a perfectly centered eyeball, and

* Presented before the O. O. and L. Society at Atlantic City, July 1, 1914.

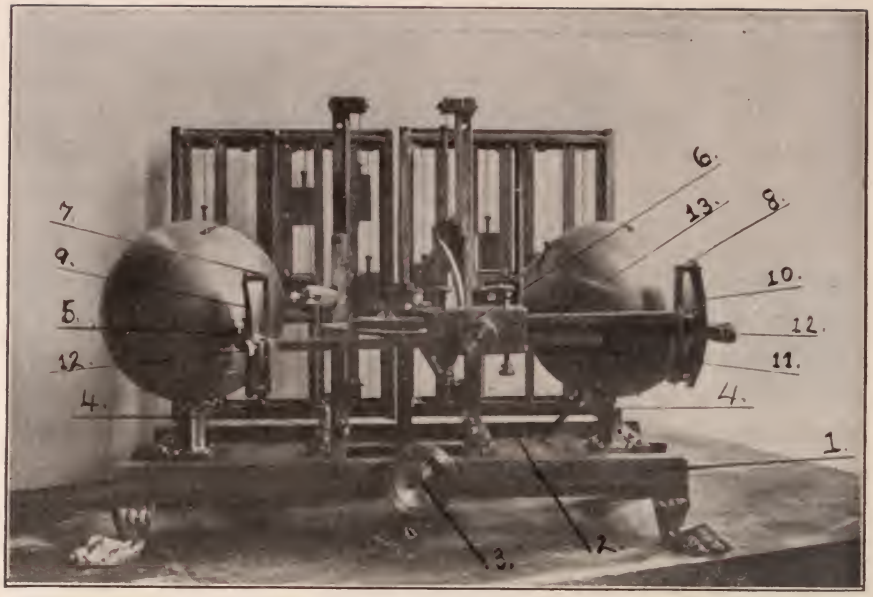


Figure 1.

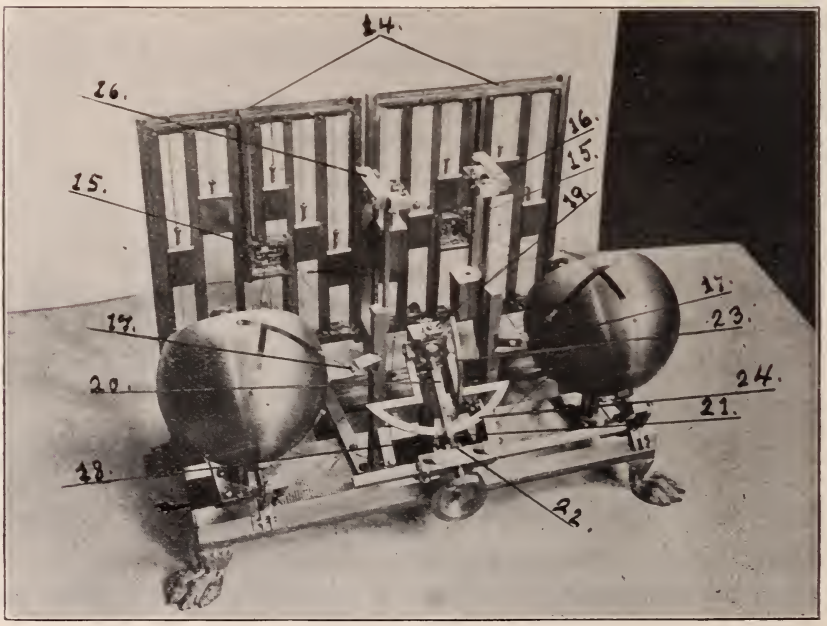


Figure 2.

that the center of rotation cannot be eccentrically or posteriorly placed, as yet the usually accepted position.*

A connecting cross-bar, (6), Fig. 1, with hinge joints, (7) and (8), at each end, are firmly fastened to these protruding threaded rods so as to allow free lateral movements of the eyes, while at the same time accurately maintaining the vertical axes of the eyes. In addition, these hinge joints have arcs, (9) and (10), graduated in degrees to demonstrate hyper- and hypotropias.

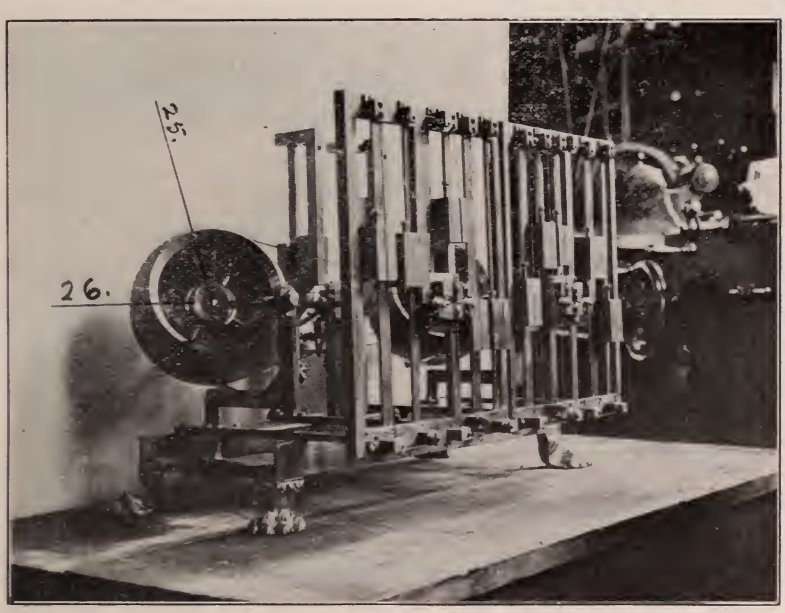


Figure 3.

This connecting bar at its center has rack and pinion mechanism, (11), for pupillary adjustments and normal convergence; also allowing excessive convergence or divergence to demonstrate eso- and exotropias. The compound forms of heterotropia are shown by loosening the set screw (12), and raising or lowering, and setting either eyeball upward or downward in conjunction with the lateral deviation. Markings on the rack, (13), show the angles of convergence and name the distance of the fixing point of vision.

* If there is any doubt in your minds that the center of rotation is not the radius of the retinal curve, I ask you to read the chapter on ocular rotations in Ophthalmic Myology, 1911, by G. C. Savage. Dr. Savage proves this point beyond any question, also that the line of vision passes through this center from the macula and that the antero-posterior axis and the line of vision coincide.

Frames, (14), **Fig. 2,** are erected in a position corresponding to the apices of the orbits. They are fastened to their respective carriers by two metal strips and move with them in pupillary adjustments. They carry graduated rods between which the weights are suspended.

A nest of pulleys, (15), **Fig. 2,** is arranged and screwed to each frame in the position corresponding to the origin of the recti and superior oblique muscles at the apex of the orbit in the human eye: numerous other pulleys are fixed in position to guide each extension cord from its muscle. An extension cord from each rectus and superior oblique muscle passes over its respective pulley in this nest, continues over other pulleys that guide it to its respective weight suspended between rods graduated in millimeters upward and downward from the center; see **Figs. 2** and **3.**

Anteriorly two uprights, (16), **Fig. 2,** carry the pulleys, graduated rods and weights for the inferior oblique muscles, and each also carries a pulley, (17), for a superior oblique muscle. Each weight being connected with an individual muscle accurately shows the movement or action of its respective muscle on the graduated rods during rotations.

CENTRAL MEMBER.

At the center of the base a post, (18), **Fig. 2,** is erected having a ball-and-socket joint, (19), that centers with the ball-and-socket joint in each eyeball. From the center of the ball in this joint a square tube, (20), extends outward and is penetrated by a square rod, (21), with ball, (22), inserted into a socket on the cross-bar forming an adjustable connecting link which together with the vertical and horizontal segments, (23) and (24), that are graduated in degrees and pivotally connected with the central post or member, forms an automatic projector, showing the visual direction in any position the eyes may take.

The degree of esotropia and exotropia are also shown on the horizontal segment, (24), but the degree of deviation is double that shown on the arc or segment. Hyper- and hypotropias are shown on the segments, (9) and (10), **Fig. 1.**

The material representing the muscles is thin clock spring steel, and in the model they are attached to the globe to conform to the average normal position in the human being. These flexible muscles

are fastened with screws to allow pivotal movement and free lateral slipping over the eyeballs while maintaining normal contact arcs during rotations. Cords are fastened to the free end of these metal muscles, are carried over pulleys and are attached to their respective weights.

By tightening the four set screws on the cross-bar or connecting link between the two eyes all play is removed, and any degree of convergence or divergence can be maintained while making rotations.

During ocular rotations the weights make definite movements; in all active or contracting movements of an ocular muscle they move downward; in all passive or relaxing movements they move upward.

In the primary position of the eyes all the weights are set at zero on the graduated rods. In rotation of the eyes in convergence or any secondary movement, the position of the weights show not only what muscles are involved in the action or rotation, but to what degree and in what way. By carefully observing the movement of the weights and the action of the muscles during rotations, one can readily not only follow, but observe and grasp the mechanism of muscular action in all their combinations and details; the normal contact arcs in the primary position, the unwinding of these contact arcs during active action, and the corresponding increase in the contact arcs of the opposing or relaxing muscles; the lateral slipping of the muscles over the globe; the muscular combinations involved in active and passive action and the changing of these combinations during some rotations. The altered muscular relations are also shown in all forms of heterotropia.

It is also seen that in the principal action of a rectus muscle the force starts or is exerted at the point where the muscle leaves the eye-ball, and that the line of traction from the origin of the muscle to this point of contact forms a right angle lever with the center of rotation which remains constant during the unwinding of the contact arc until the contact arc is exhausted; an unwinding that does not take place in normal rotations.

Any two recti in their secondary or accessory capacity or action when aiding any rectus muscle in its principal action transfer their force or pulling power forward to their attachment to the globe, establishing leverage at an acute angle—the lever extending from the attachment to the globe backward on the surface of the globe to the equator.

and connecting at this point with an imaginary pivot extended outward from the center of rotation.

The obliques also transfer their force to their attachment and have leverage action in their accessory capacity while aiding an externus in outward rotation.

All these points—and there are still others—show conclusively that the action of the extra-ocular muscles during ocular rotations is not as simple a problem as we have been taught to believe; combinations are shown that have not been thought of. The model also opens up interesting neurological problems that cannot be considered at this time.

I will show one example of complicated muscular action. Converging both eyes five degrees brings into active action both interni and the superior and inferior recti of both eyes. Maintain this convergence and rotate both eyes to the right; note the increasing active action of the three recti or converging muscles of the left eye receiving third nerve innervation. Starting from our original position, five degrees of convergence, rotate both eyes to the right; note the effect upon the three converging muscles of the right eye. It will be seen that while they are actively engaged in maintaining five degrees of convergence they are actually relaxing; that when the visual line of the right eye is directed beyond twenty-five degrees to the right both the superior and inferior rectus of this eye are becoming active divergers, although up to their turning point they were all receiving third nerve innervation to maintain five degrees of convergence, and that now five muscles are actively engaged in outward rotation of this eye; namely, the external rectus, both obliques, also as above stated the inferior and superior recti; these two muscles cannot now be receiving innervation from the third nerve. The internal rectus is the only passive or opposing muscle, and yet is at the same time actively and alone engaged in maintaining five degrees of convergence, where at the start it had the aid of the superior and inferior recti muscles.

Rule.—In any ocular rotation never less than three muscles are actively engaged.

John L. Moffat: It seems to me that it would be impossible with that machine to show the position of the muscles in extreme tor-

sion, as when you cast a glance over the shoulder. Can you tilt the whole machine so as to show that?

G. A. Suffa: Movement at any angle is free so that the visual line can be directed at any angle that the human eyes can. The vertical axes are held parallel with each other wherever the visual line is directed; the machine can be tilted at any angle, but that would not change muscular action unless the relative visual line was changed or held at the same point while the machine was being tilted. A glance over the shoulder with head tilted is a very unusual visual act and of no importance as far as an ophalmotrope is concerned.

I. O. Denman: Does it show the muscular action that makes the eye turn up in extreme convergence?

G. A. Suffa: Yes, freeing the thumb screw, (12), Fig. 1, will show the muscular action causing the hypertropia.

A. E. Cross: Is it not possible that there is an error in the amount of movement shown by these artificial muscles, from the fact that there is a disproportion between their breadth and length? For instance, the globe of the eye is enlarged to six times the diameter of a natural eye and the muscles are as a consequence six times as long, but their breadth is only two times as wide as the natural muscles of the eye. If the breadth was also six times the normal breadth might it not make a difference in the movements?

G. A. Suffa: The plane of action of the recti muscles is a line running from the center of origin to the center of attachment through the center of the muscle. The center of origin of the recti muscles in the trope is the respective pulley for each muscle on the frame; the attachment to the globe is the center of the line of traction; both are arranged as in the normal eye; flexibility in the artificial bands representing the muscles is such that the contact arcs are the same as in the normal eye; lateral slipping in the model is also unimpeded; in all these points the model corresponds to the normal eye. Contraction of a muscle, whatever its width, as I understand it, cannot be different than that along this line of traction.

John L. Moffat: It seems to me that in convergence with some action on the part of the inferior rectus the width of the muscle would make a difference in the accuracy of the movement.

G. A. Suffa: The width of the muscle would make no difference

unless lateral slipping of the muscles would be impeded so as to bow the line of traction. It is hardly conceivable that there would be any limitation in the ordinary rotations, especially convergence, which is such a common act. There are no limitations in the model.

A. E. Cross: In the normal eye does not the influence of the check ligaments make a difference?

G. A. Suffa: The check ligaments, as I understand them, limit the amount of rotation, but will not in any other way affect muscular action. It is barely possible that in extreme rotations the nest of interwoven connective tissue within the cone of the muscles might interfere somewhat with lateral movement of the muscles, but if so it would have to be placed far back, otherwise it would limit rotations, and it is hardly conceivable that such an impediment would exist. As previously stated, there are no limitations in the model.

C. L. Rumsey: I would like to ask Dr. Suffa whether he believes in graduated tenotomies.

G. A. Suffa: I do not. The esophorias and hyperphorias can be relieved as well by prisms combined with the lenses correcting the refractive error which usually co-exists; also the exophorias combined with rythmical exercise. Phorias too large for prism correction would be by operation just as I would for heterotropia.

J. V. F. Clay: Referring again to the model, it shows that all the muscles take part in the movements of the eye; we know already that the ball cannot move without all the muscles also moving, but can you call that an active movement? If the external contracts the other muscles also move; they must; but it cannot be said that they take any but a passive part in the action. If I flex my forearm by contracting the biceps many muscles are moved, but it is only the biceps that does the work.

G. A. Suffa: In calling attention to the movement of the weights attached to the muscles during rotation of the eyes, I did not claim that all the muscles were actively engaged, but I did and desire again to emphasize the fact that ocular rotations are not brought about in as simple a manner as the text-books would have us believe—by individual muscular action. I have not observed any rotation where less than three muscles are actively engaged.

220 Clarendon Street.

THE RELATIVE PROPORTION OF CASES IN A NOSE AND THROAT CLINIC, BASED ON 1,000 CASES

Douglas Macfarlan, M. D.,

Philadelphia.

PURELY as a matter of curiosity, if not of some practical value, the study of variety in any line of work may be of interest. Below is a tabulation of diagnoses in 1,000 cases from a Philadelphia nose and throat clinic; various factors of error being added in supplement.

Hypertrophied tonsils, operation advised	294
Adenoids, operation advised	206
Follicular tonsillits	220
Quinsy	71
Lacunar tonsillitis	8
Acute rhinitis	45
Muco-purulent rhinitis	48
Hay fever	8
Chr. hypertrophic rhinitis	235
r. l. t.—167	
r. m. t.— 76	
l. m. t.— 77	
l. l. t.—159	
Sclerotic rhinitis	138
Atrophic rhinitis	37
Polypoid degeneration	33
Deflected septum—to right, 142; to left, 143	285
Synechia	8
Spurs	55
Perf. septum	7
Excoriated vestibule	20
Nasal ulcers	23
Septal varicosities	6
Furuncles	3
Mucous patches	3

Diphthertic throats..... 6
Specific sore throats..... 25
Acute pharyngitis.....106
Granular pharyngitis.....115
Sclerotic pharyngitis..... 45
Retro-pharyngeal abscess..... 3
Antrum disease—acute, 4; chronic, 4..... 8
Frontal sinusitis—acute, 10; chronic, 6..... 16
Ethmoid disease..... 9
Sphenoidal disease..... 3
Glandular enlargement accompanying nose and throat conditions..106
Examination negative..... 64
Laryngitis—T. B., 4; specific, 6; acute, 43; chr., 16..... 69
Trachitis—acute, 12; chronic, 7..... 19
Carious teeth..... 31
Stomatitis 3
Gingivitis 4
Oral ulcers..... 7
Hypertrophied lingual tonsil..... 44
Lingual varix..... 30
Foreign body in n. or thr..... 3
Hysterical foreign body..... 6
Laryngeal growth (papilloma)..... 1

Cystic turbinate, 3; eczema of the vestibule, 3; haematoma of the septum, 2; edema of the uvula, 4; elongated uvula, 3; partial abductor paralysis, 2; fibrous node on cord, 1; complete paralysis of the cords, 1; streptococcic infection of the throat, 1; broken nose, 4; abscess of the ala, 2; alveolar abscess, 1; congenitally narrow nares, 1; bifid uvula, 2; cleft palate, 1; contusions of the nose, 4; papilloma of the tonsil, 1; gumma of the tonsil, 1; lupus, 1; phlegmonous suppuration of fauces post-operative, 1.

MALES—560

Ages	
1 to 10	298
10 to 20	289
20 to 30	205

FEMALES—440

Ages	
30 to 40	117
40 to 50	58
50 to 60	32
Over 60	11

The sources of error in the above statistics fall largely to the discredit of the personal element in diagnosis and to the indefinite and indescriptive terminology surrounding certain nose and throat conditions.

The hypertrophied tonsil and adenoid cases noted are especially numerous on account of school inspection, which at present is apparently clearing out all the tonsil and adenoid cases of past, present or future danger. However, those cases reported have on examination shown either obstruction or a tendency to recurrent attacks of tonsillitis.

Cases of acute rhinitis are apparently less often seen in the dispensary than in private practice, and show a marked contrast to the number of chronic rhinites seen. The neglect that the lower classes take of slight conditions and the transient term of the trouble are possibly the factors here.

Under the heading of hypertrophic rhinitis is included the most numerous class of catarrhal dispensary patients. They might be subdivided into a number of different heads, but they all exhibit certain permanent symptoms in common; namely, a chronic thickening of the mucous membrane superimposed on a vaso-motor hyperesthesia. The condition seems most often bilateral, though the alternate swelling of the turbinates may be misleading. From the figures and common observation the lower turbinates show the condition more markedly and more frequently.

By the diagnosis of sclerotic rhinitis is meant that sclerotic condition consequent upon an old chronic hypertrophic rhinitis. The picture seen is one of pale contracted mucous membranes, sclerotic because of the fibrous changes; nares somewhat dry on account of the destruction of the glandular elements, and non-vascular because of the fibrous obliteration of the venous sinuses. There is no absorption of bone nor a purulent element as in atrophy. Often the sclerosis is unilateral, the opposite side still showing a typical chronic hypertrophy. The number of cases recorded is considerable in spite of the fact that some of these duplicate the chronic hypertrophic cases.

It may be noted that there appears no tendency of the septum to deflect to any particular side. There seem to be but a few cases of diphtheritic throats, and few cases of mucous patches compared with

the number of specific sore throats. In the latter instance the insignificant subjective symptoms may be the reason why more such cases do not come for treatment.

As to the number of polypoid conditions in comparison with ethmoid disease, the statistics are somewhat unsatisfactory on account of the time and care necessary to reach a positive diagnosis of ethmoid disease. The diagnosis is hard to establish and hurried work would mean great errors. In a large proportion of the cases of polyps the presence of suppuration was not recorded.

There are singularly few cases of growths benign or malignant recorded.

Neglect of the teeth and oral sepsis, which subject has claimed so much attention of late, seems scarcely to be a serious factor in promoting nose and throat trouble. The cases of gingivitis, stomatitis and antrum infection are few in comparison with the great number of bad teeth seen in dispensary patients, and few acute throat conditions seem caused by oral sepsis. However, the ill-effects of bad teeth and an unclean mouth on the digestive tract and the general health should not be underestimated. The cases reported are those in which the symptoms were so prominent as to have a possible bearing on the nose and throat condition present.

As to age, the statistics show that over half the cases are under twenty years, two hundred and ninety-eight cases under ten years and two hundred and eighty-nine cases between ten and twenty.

Conclusions.

The general trend of the figures tends to show that though there is a large variety of nose and throat conditions, yet there are but few cases of each type seen in a year's time. The bulk of cases is made up of hypertrophied tonsils, adenoids, tonsillitis, acute and chronic rhino-pharyngitis and deflected septa.

1805 Chestnut Street.

GUAIACOL IN OPHTHALMOLOGY

Henry L. Gowens, Jr., M. D.,

Philadelphia, Pa.

GUAIACOL, or methyl-pyrocatechin, $C_6H_4\begin{matrix}OCH_3\\OH\end{matrix}$ (Bartley, Med. Chem.), is a constituent of creosote, of which it constitutes about 60 to 90 per cent.

It is prepared by the fractional distillation of beech-wood creosote, collecting that coming over between 200° and 205° C.

It is a liquid having a pleasant odor, and boiling at a little above 203° C. (397.4° F.). Its sp. gr. is 1.133 at 15° C. (59° F.). It is not very soluble in water, requiring eighty-five parts of water to dissolve one part of it.

As early as 1854 (C. G. R. Wood and F. A. Anderson, *Ophthalmoscope*, London, 1913, xi, 347-350), guaiacol diaphoresis in ophthalmology was advised for iritis, deep-seated ocular inflammations, retrobulbar neuritis, papilla œdema, vitreous opacities, chronic iridocyclitis, traumatic non-ulcerative keratitis, syphilitic ocular involvements and in tubercular reactions. Since that time very little is to be found in literature upon the subject except that of Abadie, Arnold and Darier.

In tuberculous ulcerations of the eyelids, such as in lupus, prolonged massage with guaiacol ointment (5-100) accompanied by persistent general treatment, of which guiacol internally may be a part, has been advised.

Darier uses a 1 or 2 per cent. solution as a specific in dacryocystitis following a lupus of the lid or nose, and in dacryocystitis or phlegmon symptomatic of bone lesions a 1 or 2 per cent. of guaiacol in sterilized water.

In chronic conjunctival irritation and congestion a 1 per cent. solution of guaiacol has been recommended. In spring catarrh, of the pericorneal variety, the occasional massage with a 1 or 2 per cent. guaiacol ointment is advised by Saemisch and Horner. The ointment is valuable in tuberculosis of the conjunctiva following surgical treatment, and of more value is the subconjunctival injection of guaiacol.

It has been used as a substitute for surgical interference in Parinaud's infective conjunctivitis; here the ointment is used. Symblepharon is prevented from forming after the radical operation for trachoma by passing between the eyeball and the eyelid on the day after the operation a probe coated with guaiacol ointment.

In scleritis and sclerokeratitis of tubercular origin the ointment of guaiacol is advised. Subconjunctival injections of 1 or 2 per cent. guaiacol is reported to have given good results in episcleral nodosities.

In order to prevent a cicatrix following acne rosacea of the cornea, the ointment (guaiacol) is used, together with the general treatment. In macular keratitis or superficial punctuate keratitis seen in the first two or three days, the subconjunctival injection of a 1 per cent. solution of guaiacol has been reported to have caused quick disappearance of the lesions, which otherwise may persist for three months. For the severe pain in zona ophthalmica the ointment has been used with success. The oily collyria of guaiacol has been advised in xerosis of the cornea, xerophthalmia. In lymphatic (phlyctenular, pustular, or eczematous) keratitis of a tubercular origin where the yellow ointment fails, the 2 per cent. guaiacol ointment is reported to have given good results. In deep keratitis (parenchymatous keratitis, interstitial keratitis) Darier found such encouraging results from the subconjunctival injection of the 1 to 2 per cent. watery solution of guaiacol that he believes it the injection most indicated in ocular tuberculosis.

In tuberculous iritis a 3 per cent. ointment of guaiacol rubbed into the parts around the orbit, or a 2 per cent. dressing of guaiacol in alcohol to the eye, or if both of the types of treatment are well borne, a 2 per cent. solution of the cacodylate of guaiacol as a subconjunctival injection once a week has been well recommended by Darier.

Choroiditis of tuberculous origin is now treated by the subconjunctival injections of guaiacol.

Abadie recommends in true optic neuritis, when intracranial tuberculosis is suspected, twice a day inunctions of guaiacolated cod-liver oil, 5-100, together with the general treatment. Two cases of cure have been reported by Arnold and Darier.

The subconjunctival injection of guaiacol is regarded, as to its reaction, as of therapeutic diagnostic value in tuberculosis of the eye.

just as the mercurial treatment is for syphilis and the sodium salicylate for acute rheumatic affections.

The reaction of the subconjunctival injection of guaiacol is so marked that it is reported as even more conclusive than the cuti- or the ophthalmo-reaction. This is so true, writes Darier, that one can be almost certain that an episcleritic nodule or an iridic lesion which has been treated in vain with mercury or salicylate is really tuberculous if it improves or is cured after two or three subconjunctival injections of 2 per cent. guaiacol cacadylate in sterilized water. It is all the more useful in that the injections are scarcely painful, and not painful at all if two or three drops of alypin be added.

Darier found that the marked reaction of tuberculin in three cases was arrested by a 1 per cent. subconjunctival injection of guaiacol. In a case of hypertonus (ocular) the violent pain provoked by tuberculin disappeared rapidly under a single subconjunctival injection of guaiacol. Under such circumstances he feels that tuberculin can be used with more safety than heretofore.

1636 Walnut Street.

To make Thiersch's solution, dissolve sixteen grains of salicylic acid and ninety-six grains of boric acid in a pint of sterile water. This is used on mucous membranes, such as those of the mouth and eye, and it may be used whenever irrigation is employed for cleansing purposes.—*Critic and Guide,* January.

CURRENT LITERATURE

Klinische Monatsblätter für Augenheilkunde Inhalt des Oktober-Dezemberheftes.

Dr. H. Erggelet (Jena); Klinische Befunde bei fokaler Beleuchtung mit der Gullstrandschen Nernst-Spaltlampe. Mit stereoskop. Tafel V und 1 Textabbildung. (Aus der Universitäts-Augenklinik Jena. Direktor: Prof. Dr. W. Stock.)

Doz. Dr. Henning Rönne (Kopenhagen). Ueber doppelseitige Hemianopsie mit erhaltener Makula. Mit 16 Textabbildungen. (Aus dem St. Johannesstift. Direktor: Dr. F. Vogelius) und dem psychiatrischen Laboratorium des Kommunehospitals (Prof. Dr. A. Friedenreich).

Prof. Dr. J. van der Hoeve (Groningen), Nervenfaserdefekte bei Retinochhorioiditis juxtapapillaris (Edmund Jensen). Mit 6 Textabbildungen.

Prof. Dr. H. Oloff (Kiel), Ueber die myotonische Konvergenzreaktion der Pupille.

Dr. H. Dorff (Freiburg i. Br.), Ueber latenten Nystagmus. (Aus der Universitäts-Augenklinik in Freiburg i. Br. (Direktor: Prof. Dr. Th. Axenfeld.)

Doz. Dr. P. Heinrichsdorff (Breslau), Ueber Veränderungen der Sehnerven durch Arteriosklerose an der Schädelbasis. Mit 1 Textabbildung. (Aus der pathologischen Abteilung des Städtischen Wenzel-Hanche-Krankhäuser in Breslau.)

San. Rat Dr. Jul, Pindikowski (Freiburg i. Br.), Ueber das Oberflächenwachstum intraokularer Sarkome, zugleich ein Beitrag zur Kenntnis der Ringsarkome. Mit 3 Textabbildungen. (Aus der Universitäts-Augenklinik in Freiburg 1. Br.) Direktor: Prof. Dr. Th. Axenfeld.)

Doz. Dr. W. Tschirkowsky (Kasan), Stauungspapille bei Sclerosis disseminata. (Zur pathologischen Anatomie der Sehnervenerkrankungen bei diesem Leiden des Sehnervensystems.) Mit 6, darunter 2 farbigen Textabbildungen. (Aus der Universitäts-Augenklinik zu Kasan.) (Direktor: Prof. Dr. A. G. Agababoff.)

Dr. E. Wiegmann (Hildesheim) Ergänzung zu meiner Mitteilung: Ein eigenartiger Irisbefund, angeborene Spaltung in zwei Blätter.

Dr. W. Reitsch (Hirschberg i. Schlesien), Zwei Seltene Irisbefunde. Mit 2 Textabbildungen.

Dr. L. K. Wolff und Dr. W. P. C. Zeeman (Amsterdam), Ueber die Kutireaktion von Noguchi bei Lues. (Aus der Amsterdamer Universitäts-Augenklinik.) (Direktor: Prof. Dr. M. Straub.)

Prof. Dr. L. v. Blaskovics (Budapest), Ein Vorschlag zur Lösung der Fräge der Sehschärfeeinheit.

Prof. Dr. Franz F. Krusius (Wilmersdorf-Berlin), Ueber ein Neues Brillen-Probiersystem. Mit 4 Textabbildungen. (Aus dem experimentellen Laboratorium der Optischen Werke Nietsche & Günther, Rathenow.)

Dr. E. Ammann (Winterthur, Schweiz) Zur Fräge der "Angewohnung."

Doz. Dr. Elena Puscariu (Bukarest), Bindehautlappen bei der Staroperation. Mit 4 Textabbildungen. (Aus der Universitäts-Augenklinik in Bukarest.) (Direktor: Prof. Dr. G. Stanculeanu.)

Dr. S. Türk (Berlin), Ein Weg zur Erleichterung der Trepenation nach Elliot. F. O. N.

Annales d'Oculistique, Aout, 1914. (Received in January.)

*1. Opération du ptérygion. A. Terson.

*2. Note sur une nouvelle opération du ptérygion. Uribe y Troncoso.

3. Les blessures des yeux pendant les deux dernières guerres gréco-turque et gréco-bulgare. G. F. Cosmettatos.

4. Néurite optique familiale (2 frères, 1 soeur) insufficiance thyroidienne). A. van Lint et G. Kleefeld.

5. Importance de la lampe Nernst à fente pour les examens cliniques. C. A. Hegner.

*6. Les ferments de dèfense dans les maladies des yeux. C. A. Hegner.

7. Lésions oculaiers causées par la temture d'iode. Dr. X.

8. Artérite syphilitique rétinienne: hémorrragie récedivante du corps vitré. Dr. Carlos Charlin.

*9. Société d'ophtalmologie de Paris 7 Juillet, 1914.

*10. Société d'ophtalmologie de Lyon, Janvier, 1914.

*11. Academie des sciences, 29 Juin, 1914.

*1. Terson was the first to fix the sutures in this operation by including the sclera. When curetting and lightly cauterizing the corneal seat of the head of the pterygium is not satisfactory Terson replaces the head with a superficial graft ("calotte") from the upper edge of the same cornea—his autokeratoplastic, 1911. Morax and Margitot have employed it with good results.

In 1913 Terson made this graft with a knife; this piece is a little more wrinkled (rugueux) and possibly (?) adheres better on this account than one secured by trephining. The question of grafting is to be decided in each case.

He first excises the pterygium with scissors, shaped like a trap-door. 2. . Detach the head of the pterygium with a small convex bistoury or a trephine and if necessary follow with a delicate actual cautery; very rarely corneal transfixion, as that is apt to leave a cicatrix. Do not cauterize it if a graft is made. Suture the rectangular conjunctival flap high up—in some cases it will be covered by the upper lid—involving the sclera as in capsulomuscular advancement, insuring above all the solidity of the juxtacorneal point—"the key of the suture"—the juxtacaruncular point may be lower. Avoid catgut. Very fine solid black silk traverses the episcleral tissue more easily than does fine reindeer tendon.

Next the autokeratoplasty if necessary and there has been no cauterization.

Binocular dressing. Remove the silk sutures on the sixth or seventh day; leave the reindeer tendon for its slow absorption. Terson has found no relapse.

*2. Uribe Troncoso has not found Terson's method secure against recurrences. He dissects the head from the cornea; dissects the pterygium down to the sclera, particularly at its edges and for about three millimeters beyond; cornea and sclera are curetted clean. Replacing the completely liberated head he amputates it with a vertical snip of fine scissors at the limbus and extirpates the conjunctival triangle which adheres about the cornea. Retraction of the conjunctiva leaves a semi-circular wound exposed. From its caruncular edge an incision is made with scissors upward and nasally through conjunctiva and episcleral tissue, prolonged upward and outward at about right angles so as to form a flap (when dissected loose from the sclera) to cover the denuded area. The base of the flap is broader than the summit. In suturing, no tension must be exercised on the flap; a gap of even a millimeter at the limbus vertical incision is not fatal to success. (We regret the impracticability of reproducing the illustrations.) A light compressive dressing is undisturbed for three days; the stitches removed on the sixth. After four or six weeks no conjunctival scar will be found, provided there has been no pre-existent conjunctivitis. The author has practiced this for more than two years and has had but one true recurrence. In one case he did this on a patient's right eye and the ordinary rhomboidal resection on the left; a relapse occurred in the right eye, while the right remained normal.

*6. By dialysing blood serum with fresh uvea of the pig, Hegner has "established the remarkable fact" that in the course of certain eye diseases there are formed in the blood defensive ferments which are specific for the uveal tissues. The formation of ferments has been most clearly proved in recent sympathetic ophthalmia; also when there is persistent uveitis following perforation of the ball. Even perforations not followed by inflammation may provoke a positive

reaction, but ferments do not seem to be provoked by other non-traumatic affections of the uvea. In a case of severe perforation of the ball with danger of sympathetic inflammation the reaction was positive so long as there was inflammation of the bulbus and became negative eight days after enucleation of the wounded eye. In another case—iridocyclitis following Elliot trephining—the reaction, at first negative, became positive eight days later. During recent sympathetic ophthalmia the ferments are readily found in the blood, but not during the period of cure.

Elschnig thinks that the retinal and uveal pigment play a considerable role in the genesis of sympathetic ophthalmia. Investigating this, Hegner collected by centrifuge the pigment which was easily isolated by agitating the uveal tissues while boiling. He then introduced it, with blood serum, into the dialysing tube and noted that each time the uvea was attacked by the serum the pigment furnished a positive reaction. Some retinal pigment generally adheres to the uvea; the pigment is very refractive to dissociation and is a complicated substance; uveal tissue despoiled as much as possible of its pigment has also given a positive reaction; it follows from this that the duly established action of the ferments concerns the uveal cells as such, that it is specific to this tissue and that here the pigment does not, apparently, play any special role. The writer considers it established that the eye in the course of certain affections is the exciting cause of defensive ferments in the blood; and holds that one may believe that in the course of certain affections of the uvea its cells or cellular elements enter the circulation and, as foreign matters in the blood, provoke a formation of specific defensive ferments which dissimilate them into secondary albuminoids. But it is yet impossible to state whether or not the above has a causal relation to sympathetic ophthalmia.

*9. Iritis and indigestion.—Mawa reported two patients with recurrent iritis, the relapses coinciding with hepatic colic in one case, enteritis in the other—the eyes being cured with the relief of the digestive attacks.

*10. Fracture of the cranium.—Rollet and Genet report a case, examined fifty days after fracture of the skull from a blow on the right side. The left external ocular motor nerve is completely paralyzed. There is a subjective and objective central scotoma of the right eye extending horizontally between 5° internally and 12° externally, and vertically between 5° and 10°. This scotoma seems to correspond to the macular fascicle. A lesion causing this would be immediately in front of the optic foramen affecting the nerve on its external side.

Probable rupture of a posterior ciliary nerve.—L. Dor reported a patient who presented, following a direct blow on the cornea, a rupture by contre-coup of the choroid at the posterior pole a disc diameter below the macula—and at the same time mydriasis and almost complete paralysis of accommodation. This choroidal tear is just where one of the posterior ciliary nerves enters; rupture of this nerve filament could explain the mydriasis and ciliary paralysis without imagining rupture of the sphincter and of the ciliary muscle. Dor supposes that the role of the nerve entering a disc diameter above the macula is to contract the iris and ciliary sphincters.

Aurund thought it simplest to attribute this traumatic mydriasis to one or several minute ruptures of the pupillary sphincter provoked by small ruptures of the ciliary muscle or at least by effusions of blood into this muscle.

*11. Experimental researches upon corneal grafting.—Only epithelial tissue can preserve, when transplanted, its vitality and cellular personality. This

property of epithelial survival is not characteristic alone of the autoplastic graft, it extends also to certain heteroplastic ones. The conditions of survival of healthy tissue transplanted to pathological surroundings have not yet been determined. Biologically and practically this question is of great interest.

Bonnefon and LaCoste in three years had seventy per one thousand successful autoplastics in the rabbit; of their heteroplastics forty per one thousand succeeded in the "lapin-cobaye," and twenty-five per one thousand in the "lapin-poule."

Pacific Coast Journal of Homoeopathy, December, 1914.

*1. The London Meeting of Surgeons. Edward R. Kellogg.

*2. What Is In Your Glands. Edwin Norman Chaney.

*5. Correspondence. A New Way of Studying Materia Medica. Philip Rice.

*1. J. B. Murphy considers that the majority of infections which resulted in joint disease were directly due to diseased tonsils. Charles H. Mayo, of Rochester, Minn., read "Primary and late Results of Operations for Exophthalmic Goiter or Hyperthyroidism": With their *present* operation the mortality is very low and the results most gratifying. They are now thoroughly satisfied that ligation of the blood supply gives but temporary relief, the circulation becoming entirely re-established inside of a few months. In the majority of these cases adenoids and hypertrophied tonsils had existed in childhood; the stimulation of the glandular system of the neck had started the overdevelopment of the thyroid gland.

Five fifteen-minute papers were read by Ulrich (Copenhagen), Brophy (Chicago), Brown (Milwaukee), Eastman (Indianapolis) and Haerger (Berlin) on the best operations for the various forms of cleft palate and hare-lip. They showed that such children should be operated when very young; when three or four years old several operations are usually necessary to close the cleft; that then the soft palate is often so stiff and far forward from the pharyngeal wall that speech is far from normal; and it was impressed on all present that if success is doubtful it is far better for the child to wear an artificial rubber palate until maturity, when an artificial rubber palate with soft rubber velum can be worn with which the patient can talk almost perfectly. Calvin Case (Chicago) has a number of patients who speak so perfectly that one would not know they had a cleft palate. No one operation will suit all cases.

*2. Chemical analysis and microscopial examination of the glandular secretions and excretions are insufficient evidence from which to obtain a reliable diagnosis. Within the dynamic status and orificial lesions are to be found the origin of a pathology causing a long list of pernicious diseases in many patients." "When the ductless glands become distended, in nearly every instance it is because the Missner's nerves are incapacitated by terminal impingements or ulcerations and the loss of a dynamic influence. This depletes the excreting powers of the glands. The only (?) practical method to restore these enlarged glands is to remove the sympathetic nerve irritation and return the lost dynamis with a potent remedy. Destruction is questionable and contrarily indicated."

*5. "You ask that I give you a concise statement of my ideas concerning a reconstruction of our materia medica, and suggestions for a better method of teaching the subject."

It is perfectly clear that the individual who is sick or who has been made sick with a drug is the object of prime importance. Yet is it not true that in our present method we concern ourselves chiefly—yes, almost wholly—with symptoms? In proving, we record effects only. The individuals in whom the symptoms are developed and in whose varied organizations lie the causes which produce varied manifestations of the symptoms and degrees of susceptibility we refuse to take into account.

Hering clearly saw the necessity of *going back of the symptoms into the field of the facts in which symptoms have their origin and from which they receive their peculiar and individual expression.*

The development of this phase of our science, this much neglected phase, the method I have in mind would undertake. The constant reference to it by Hahnemann, Boenninghausen, Hering and others seems to me is sufficient reason for believing that it is important, though there are abundant reasons besides this, and it is demanded of us that it is worked out and placed upon a scientific basis.

Organization determines function—this is the basis of my scheme, and the basis of the theory of temperaments. The whole structure of biological science is built upon this one idea. Since symptoms, or reactions, are but expressions of the character of the functions, a modification of organization must likewise be followed by a modification of the symptoms or reactions. A person whose dominant development lies in the nervous sphere must of a necessity have a different combination of functions and reactions from one whose dominant development lies in, let us say, the osseous or the lymphatic system. The two cannot possibly react to the same drug in the same way. To declare that they can is to deny the fact that organization determines function; and this we cannot possibly do if we attach any value to the teachings of the science of biology. Development and correlation of organs determine the vigor of function and establish a corresponding degree of predisposition and susceptibility. That is to say, an organ that is well developed and so related that its vigor of function is not impeded by a correlated organ will perform a more vigorous function and possess a higher degree of resistance than one which is poorly developed and poorly correlated.

From this it follows that a method of examination which will disclose to us intimate information of the character of organization of an individual in whom symptoms are developed in a proving, will at the same time give us information relative to the character of the symptoms, and their value, too, which our present methods cannot possibly supply. Our present arrangement of the materia medica gives us nothing but words, and our knowledge of the subject, which in reality is no knowledge at all, has no better foundation than mere word memory. As our materia is constructed today nothing better really is possible. Merely jotting down the symptoms a person who is taking a drug details to us, or such as we may observe following an injection of a drug in one of the lower animals, is a method that has absolutely nothing to commend it from a scientific point of view.

That a method of examination which will give us full and accurate knowledge of an individual's organization is possible, I am firmly convinced.

For our starting point in quest of such a method we begin with the fact that the contour and proportions of the body depend on the development of the organs within. (How about the nose and sense of smell?—J. L. M.) A

person who has large muscles has large arms and legs. One who has a large liver has a large right hypochondrium, etc. These and all other essential facts are wholly within the range of accurate measurement and analysis. Hence, when we have ascertained by close examination and accurate measurement the degree of development of an organ or system, then according to the principle which says that vigor of function is determined by degree of development and correlation of organs are we in a position to estimate the character of function, the nature of the predispositions and susceptibilities and the character of the reactions

The manner in which this theory is applied to the study of materia medica is briefly, as follows: First a careful morphological analysis is made of each individual upon whom a drug is to be tried. Everything that is essential to an understanding of each organization is accurately and fully recorded. Where one organ or system is dominant this must be determined, as well as its relationships; and all is made a part of the final summary. As symptoms develop these are then considered in their relation to the character of the organization in the particular sphere in which they are produced, *and it will invariably be found that there is an intimate connection between the character of the symptoms and the character of the organization.*

Such a method means, and this is most important, the bringing of the study of materia medica and the study of the so-called fundamental sciences (anatomy, physiology, embryology, etc.) into close and direct relation. In the way many teach these latter subjects they have not the slightest bearing upon the study of drug action and not the remotest connection with the study of the principles of similia; this is a serious mistake, and it, I think, explains why so few students take any vital interest in the subject which supplies the one and only reason for our existence as a separate school of medicine.

Whatever the combination of the symptoms, *their character is positively determined by the character of the organization;* and since this latter can be fully understood, the symptoms can likewise be understood and accounted for. In the final summary the symptoms and the individual morphological combination in which they were produced are given equally careful attention. And so we go through our list of drugs.

This means much work, to be sure. But see how scientific and firm will be the basis of our materia medica. See how differently we will be able to deal with the pathogenesis of a drug when once it has been worked out on this line. Symptoms can now be studied in the proper relation to the concrete and living individual, and the unscientific and impossible method of trying to create a fictitious image with disconnected symptoms can be discarded.

Dr. William Boericke comments editorially on Dr. Rice's proposed re-study of the homoeopathic materia medica in the light of the science of morphology:

The therapeutic method of Hahnemann, that of symptom-similarity, analyzes the symptoms of the individual patient, always away from the disease as such, taking into special consideration the *individuality of the patient,* not the pathognomonic symptoms of the disease only. And the study of this individuality and its organic basis, as disclosed by the science of morphology, is certainly going to be one of the chief directions of developing the homoeopathic materia medica in the immediate future. Such research work must be done systematically and by trained men, which can only be furnished by institutions large and independent enough to also furnish the material and money. We hope

Dr. Rice may be given the opportunity to verify and develop the materia medica along these scientific lines.

Long Island Medical Journal, January, 1914.

9. The Necessity for Early Treatment of Squint. George E. Deely.

*12. The Chemist Optician. Editorial.

*12. A drug journal, published by a large jobbing house, announces: "A new book published by the *Chemist and Druggist,* of London, telling druggists how to take up and make money out of this profitable branch, tells you how to test sight, fit glasses and fill prescriptions—a money-making book for every druggist."

This is a logical seqeuence of the privilege granted optometrists by the state legislature. The enormous and disproportionate profits arising from the sale of spectacles has long been known to the initiated, who have fully appreciated the real ambition of the optometrists. Their lucrative business is likely to be cut into when the retail druggists start peddling spectacles. J. L. M.

INDEX OF NOSE AND THROAT LITERATURE

Amer. Jour. Roentgenology, October 1, 1915.

Roentgen examination of the sphenoid sinus. D. R. Bowen, Philadelphia.

Boston Med. & Surg. Jour., CLXXII, No. 2, January, 1915.

Modification of technique for hare-lip operation. W. E. Sadd.

Illinois Med. Jour., XXVII, No. 1, January, 1915.

Diagnosis of intracranial complications in diseases of middle ear and acecssory sinuses of the nose. J. C. Beck, Chicago.

Medical Record, LXXXVII, No. 3, January, 1915.

1. Vaccines in relation to mouth infections. G. Head, Philadelphia.
2. Some ocular manifestations of aural disturbances and their interpretation. J. A. Hagemann, Pittsburgh.
3. Successful use of emetine in control of hemorrhage following nasopharyngeal operations. J. Weinstein, New York.

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1. Inferior turbinate; its flap resection to reduce it when obstructive. O. I. Freer, Chicago.
2. Rhinitis; acute and chronic. L. J. Goux, Detroit.
3. Physiologic physics in relation to eye and ear. A. F. Burdick, Lansing.

4. Bacteriology and bacteriotherapy of the upper air passages. A. Odell, Detroit.
5. Eye complications in infections from zymotic fevers. G. A. Bulson, Detroit.
6. Hemorrhage from the ear. W. E. Newark, Charlotte.
7. Aural conditions following contagious disease. J. M. Robb, Detroit.
8. Intranasal and pharyngeal infections in their relation to eye and ear. E. P. Wilbur, Kalamazoo.
9. Acute and chronic sinusitis of nasal and pharyngeal origin. F. N. Smith, Grand Rapids.

Surgery, Gynecology and Obstetrics, XX, No. 1, January, 1915.

1. Surgery of cleft palate. J. Berry, London.
2. Principles which govern ultimate results of hare-lip and cleft palate operations. G. V. I. Brown, Milwaukee.
3. Factors of safety in cleft palate surgery. J. R. Eastman, Indianapolis.
4. Treatment of cleft palate. F. W. Goyder, Bradford, England.
5. Late results of cleft palate operations. T. W. Brophy, Chicago.

British Med. Jour., January 2, I, No. 2818.

1. Grey hair and disease limited to naso-labial area. G. L. Creatle.

Lancet, January 1, 1915, No. 4766.

2. Two cases of cicatricial stenosis of the larynx. H. Barwell.

Riforma Medica, Naples, December 19, 1914, XXX, No. 51.

Tonsil extract in therapeutics. C. B. Farmachidis and A. Vattuona.

New York Med. Jour., January 30, 1915, CI, No. 5.

Endothelioma of the soft palate. R. H. Ivy, Philadelphia.

Monthly Cyclopedia, XVII, No. 11.

Absorption of epinephrin from nasal mucosa. A. C. Buckley.

Douglas Macfarlan.

ABSTRACTS

Osteoplastic Surgery of the Face.—"My attention was first directed to the advantage of fat transplantation for the correction of facial deformity by a patient who had suffered extensive necrosis of both cheeks following the injection of paraffin by one of the most widely advertised 'Beauty Doctors'! After excision of the scar and the formation of cutaneous flaps, the depression was filled in by a flap of fat dissected subcutaneously from over the malar bone."

Dr. Babcock has had an extensive experience in this work and finds that the transplanted fat finds ready attachment, does not provoke serious inflammatory reaction and retains after vascularization its capacity for storing hydrocarbons—in other words, is not absorbed. There is no tendency to spread, as with paraffin, and the great danger of necrosis is eliminated. Dr. Babcock uses a piece of tibia for transplantation in the correction of the saddle nose deformity. W. Wayne Babcock, *Jour. Amer. Med. Assoc.*, January 16, 1915.

DOUGLAS MACFARLAN.

Cystic Odontomas.—This subject, an interesting one from the clinical appearance of the cases, has been little touched upon in this country. The cases are not infrequently seen by the nose and throat man; they are apt to be referred to him sooner or later for consideration. New has made the following classification of odontomas:

A. Simple cysts:
   1. Dental or root cysts,
   2. Follicular cysts (usually containing a partially formed tooth).

B. Adamantinomas.

The twenty-six cases reported here are from the Mayo Clinic and show that the simple cysts are the most frequent by half. They are of less surgical importance than the other types; they occur at any age, and are attributed as to their origin to the development of embryonal dental tissue. Their most frequent appearance is in the upper jaw in the incisor and bicuspid regions. They may arise from persistent supernumerary anlagen.

In the second type of simple cysts, the so-called "follicular," their appearance is expected only after the second dentition. There is often noticed a tooth missing from the set and a partially developed one found in the cavity of the cyst. The wall of the cyst consists of thin bone and the mucous membrane covering in the mouth is quite smooth.

The *adamantinomas* are still of disputed origin, some ascribing their development to a perversion of the activity of the enamel organs, others to a development from epithelial masses found in the jaws. The latter is the most accepted theory. Adamantinomas are most often seen in the lower jaw in the region of the ascending ramus and the angle. They soon spread horizontally to include the whole jaw. They appear at any age and run a prolonged course of years' duration. Glandular involvement is not seen. Their wall, like the others, is bony; crackling may be elicited in some areas on pressure. They present a smooth surface in the mouth unless they become infected. The tumors are usually of a large size and give rise to great pain because of the pressure of enclosed fluid.

Diagnosis is usually not difficult in the case of the cyst odontomas. The roentgenogram will show a partially developed tooth, a unilocular cyst or the septa in the multilocular variety. Differential diagnosis from giant-celled sarcoma is usually the most difficult, and this has to be made at the time of the operation or by microscopic examination.

Treatment of single cysts consists in a thorough curettement of the wall and packing with gauze. In the larger type resection may be required.

The adamantinomas, however, require more radical treatment, since a simple curettement is followed by recurrence; a resection is usually necessary. Recurrences are frequent in the latter cases even, and not seldom a patient is found to have an inoperably large tumor.—G. B., New, *Jour. Am. Med. Assoc.*, January 2, 1915.

Douglas Macfarlan.

The Treatment of Advanced Tympanic Deafness.—Dr. Kerrison strikes a true note in his discussion of the treatment of tympanic deafness: "An experience of years with catheter inflation has convinced me that the frequent routine use of the catheter as a means of correcting ossicular rigidity is based on a false conception of the mechanism involved. The theory on which it is used is, of course, obvious,

viz., that the act of inflation moves the drum membrane and with it the ossicles, thereby tending to restore their normal mobility. The beginner in otology is often enthusiastic over the distinct functional gain following the first or second inflation, and is at a loss to explain his failure by the same means to obtain continued and progressive improvement of hearing. The explanation of this phenomenon is that the first few inflations in the case of an individual whose ears have not been under recent treatment often do result in the breaking or at least modifying of small intratympanic adhesions, with consequent improvement of sound transmission. If continued as a routine measure the force of the inflations is exerted more in the direction of stretching the drum membrane while exerting progressively less influence on the ossicular chain. . . . The first rational indications of treatment having been carried out, there remains in these cases a variable degree of residual deafness which represents the real problem of the disease."

Experiments are cited in which the drum was incised and the mobility of the ossicles examined by a delicate blunt hook. Passive movements broke up adhesions and occasionally gave permanent benefit. The malleus and incus could be most frequently mobilized, but particularly with the stapes adhesions were apt to reform. The work was done entirely as an investigation, and the conclusions reached were limited. Old and firmly organized bands within the tympanum were not expected to be broken up. "It may on the other hand render certain adhesive processes less rigid and to this extent bring about an increase of joint mobility with proportionate gain. . . . In actual practice the results have varied considerably in different cases, some being aided while others have shown little or no improvement. As offsetting failures, there have been no untoward results."—P. D. Kerrison, *Jour Amer. Med. Assoc.*, January 9, 1915.

Douglas Macfarlan.

v. Behring's Method of Active Immunization Against Diphtheria With a Mixture of Toxin and Antitoxin. A Critical Review of the Literature.—In this review the writer calls attention to the fact that in spite of quarantine and disinfection diphtheria still is on the increase, and remarks how in Berlin the cases have risen from 2,997 in 1906 to 11,578 in 1911. While antitoxin has reduced the

death rate in this disease, an efficient method of prophylaxis is yet to come forth.

The writer refers to the recent work of v. Behring in the production of immunity, which consists in the injection of small fractions of 1 c. c. of toxin and antitoxin in such proportions that the mixture is innocuous or very slightly toxic to guinea pigs. In his review of the literature Hooker goes back to 1902, and briefly refers to the works of many investigators along this and similar lines.

v. Behring first reported his method in April, 1913, and the subsequent observations of others lead to a unanimity of opinion in regard to the absolute harmlessness, and to the efficacy of this method of establishing an immunity against diphtheria. In some details, such as the dose and the method of administration, there is still disagreement.

Regarding the influences of this treatment on diphtheria carriers, the results have so far been negative.

The writer in his summary says, "The important facts revealed by this survey of literature are the harmlessness of the method, the ease and comparative rapidity with which the formation of autogenous antitoxin can be effected, and the importance and necessity of further study along this line."—S. B. Hooker, *The New England Medical Gazette*, January, 1915. John G. Wurtz.

Stauungspapille bei sclerosis disseminata.—Choked disc is of very rare occurrence in multiple sclerosis. It has been found only nine times, according to the literature. Bruns and Stölteng first observed choked disc in multiple sclerosis.

In 1912, Dr. Frank, in an article entitled, "Ueber die Sehstörung bei Multiple Sclerosis," records two cases which began with symptoms of brain tumor, headaches and choked disc. Only after the cases were under observation for some time was the diagnosis of multiple sclerosis made possible.

Rosenfeld recorded a case of choked disc and gives us the anatomical pathological report of the optic nerve. Rosenfeld expresses himself as to the origin of choked disc. He believes that it is not the result of increased intracranial pressure, but is a sequel of a sclerotic patch immediately behind the optic nerve, whereby the dural sheath is com-

pressed. As a clinical characteristic for choked disc in multiple sclerosis, Rosenfeld considers early atrophic changes or early and complete subsidence of the swelling of the optic disc.

Müller, Willrand and Saenger also have reported cases of choked disc occurring in multiple sclerosis.

From the clinical histories of all the cases reported in the literature we can make two deductions: 1. The choked disc runs a much quicker course. 2. All the cases were diagnosed as cerebral tumor before the correct diagnosis was made.

Tschirkowsky, after reviewing the cases from the literature, gives us in detail the clinical and pathological findings of his case, with several microscopic photographs. Tschirkowsky calls attention to the fact that all the anatomical pathological examinations of the optic nerves have been made in chronic cases of multiple sclerosis; the only exception was the case reported in 1912 by Rönne and Wimmer, who give a microscopic report of choked disc in a case of multiple sclerosis acuta. This case closely resembles the one which is reported by Tschirkowsky. A full discussion of the various theories of the origin of multiple sclerosis is given, and to anyone interested in this disease this article is exceptionally valuable.—Tschirkowsky, *Klin. Monatsbl. f. Augenheilk,* December, 1914. F. O. N.

SOCIETIES

THE Philadelphia Eye, Ear, Nose and Throat Society held its regular monthly meeting Monday evening, February 8th, at 7 P. M., in the Hahnemann Medical College, with the President, Dr. H. S. Weaver, in the chair. The scientific program consisted of a lantern demonstration and dissection of the brain by Dr. H. L. Northrop, Professor of Anatomy in the Hahnemann Medical College, Philadelphia. Dr. L. C. Wessels, Opthalmologist to the City of Philadelphia, read a paper on "The Importance of Correcting Visual Defects in School Children."

At this meeting the Society entertained as its guests Dr. Hetrick of New York, Dr. Baber of the State Institution, Dayton, O.; Dr. R. R. Duth, of Badsden, Ala., and Dr. W. Thompson, of Chicago, Ill.

The meeting was well attended (Northrop always draws a crowd) and much enjoyed by all.

JOSEPH V. F. CLAY, M. D., Secretary.

NEWS ITEMS

On six recent successive Saturday evenings Dr. George W. Mackenzie has had almost the entire staff of the New York Ophthalmic Hospital as an audience for his lectures on the internal ear. These lectures were primarily for the post-graduate students, but intense interest in them has been shown by the entire faculty. Charts, models and drawings, as well as demonstrations, have served to illuminate a most technical subject.—H.

Dr. J. R. McCleary has been taking a month's vacation, which at this season they seem to find more easily possible in Cincinnati than in high-office-rent New York; but perhaps it is a greater joy to leave Cincinnati at any time.—H.

Dr. A. B. Norton having recovered from the damaged hand noted in our January issue has gone a mid-winter golfing at Augusta, Ga. He must get on the favorable side of the high-office-rent proposition. It is rumored that he does.—H.

Dr. L. E. Hetrick is the new Secretary of the Medical Board of the New York Ophthalmic Hospital.—H.

The February meeting of the Philadelphia Society of Clinical Research was held in the office of Dr. Percy Tindall, Assistant Opthalmologist to the Hahnemann Hospital. Dr. Tindall presented the "Anatomy of the Eye."—P.

The monthly meeting of the Philadelphia, Eye, Ear, Nose and Throat Society was held at the Hahnemann Medical College Monday evening, January 11. Dr. Frank O. Nagle presented a paper on "The Eye Symptoms of Multiple Sclerosis." This paper will appear in an early issue of the JOURNAL.—P.

The annual banquet of the staff of the West Philadelphia General Homoeopathic Hospital was held on the evening of January 29. Dr. William D. Culin acted as toastmaster. Addresses were made by

News Item:

Drs. L. T. Ashcraft, George P. Stubbs, G. W. Mackenzie and Charles Seybert.—P.

The Philadelphia Eye, Ear, Nose and Throat Society was entertained at the regular monthly meeting, February 8, with a lecture and demonstration of the brain by Dr. H. L. Northrop, Professor of Anatomy in Hahnemann Medical College. The lecture was illustrated by lantern slides, a free use of models and dissections of the brain.—Ed.

In Dowagiac, Cass County, Michigan, with a population of five thousand and more and good surrounding country, there is a good opening for an eye specialist, owing to the recent death of the only eye specialist in the city.

On March 19, the Atlantic City Homoeopathic Medical Club will hold their annual open meeting at the Atlantic City Yacht Club at 8 P. M. Members of the local club extend a most cordial invitation to any of their brother physicians from out of town, and will do their best to provide a profitable and enjoyable evening. Several excellent papers are on the program, also a sea-food buffet luncheon.

The Atlantic City Homoepathic Medical Club, at their regular monthly meeting on February 19, held at the Atlantic City Yacht Club, were treated to a fine talk by Dr. H. B. Eberhart, of Philadelphia, on "Points in Abdominal Diagnosis, with a Short Discussion on Early Symptoms of Cancer of the Stomach, and the General Practitioner's Course with Gastric Ulcer." Dr. W. C. Barker, also from Philadelphia, gave a talk on "The X-Ray as a Diagnostic Aid in Gastro-Intestinal Cases."

THE SURGEON

As high priest teaching an acolyte,
He watches over each holy rite,
The flame and water to make them clean –
Body and garment and weapons keen—
With sacred care for a sacred strife;
To rout a foe in the House of Life!
For blade and body must both be pure,
And hand be steady and eye be sure,
And weapons purged in the fiery glow,
Whenever he wars against a foe.

With joy of battle his soul is rife.
Behold! He enters the House of Life!
His flashing blade, it is dripping red—
He follows fast where the trail has led,
To the sacred shrine with ruby throne,
Where Life has fought with the foe alone.
As the high priest's hand may lift the veil
He boldly enters the holy pale;
His hand is steady, his weapon bright—
The foe is vanquished and put to flight!
And life awakens, with anguished breath;
For man has grappled and beaten—Death!

ANNE MCQUEEN, in *Lippincott's*.

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CINCINNATI, OHIO

Editor: DR. G. W. MACKENZIE
Associate Editor for April: DEAN W. MYERS, M. D.

CONTENTS FOR APRIL, 1915

EDITORIALS

Page

An Appreciation of the Services of Associate Editors and Contributors 279
The Next O. and O. Meeting 279
Orthodontia 280
Science 280
The Associate Editor for May 282

ORIGINAL CONTRIBUTIONS

The Streptococcus Question. By Dean W. Myers, M. D. 283
A Method of Early Diagnosis of Streptococcus Sore Throat. By Ralph R. Mellon, M. S., M. D. 291
The Cause of Failure of Some Rhinological Operations. By Martin Dewey 309
Functional Blindness. By George A. Shepard, M. D. 314
Skiagraphic Diagnosis of Nasal Accessory Sinuses. By Hugh M. Beebe, M. D. 319
A Few Plain Truths. By Philip Rice, M. D. 326
Conglobate Tubercle of the Choroid—A Case. By A. E. Ibershoff, M. D. 331
Blindness from Brain Tumor—Two Cases. By James A. Campbell, M. D. 336
Two Unusual Injuries to the Eye. By Alexander R. Crebbin, M. D. 339
Pneumo-Massage in Diseases of the Middle Ear. By H. G. Schenck, M. D. 342
The Jury, the Bulwark of Freedom. By Leon A. Berezniak 353
A Reply 358
Another Reply 361

CURRENT LITERATURE 362
ABSTRACT 369
NEWS ITEMS 371

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The Journal of Ophthalmology Otology and Laryngology

Vol. XXI APRIL, 1915 No. 4

EDITORIAL

AN APPRECIATION OF THE SERVICES OF ASSOCIATE EDITORS AND CONTRIBUTORS

The editor is gratified at the support the JOURNAL is receiving from the associate editors and from the individual contributors. In the words of the colored deacon, referring to the sermons of the new preacher, our original papers "never fall below the average and often rise above it."

The subscribers have not been tardy in expressing their appreciation of the high quality of the JOURNAL, attested by the numerous letters received by the editor and his associates.

Let the good work go on.

THE NEXT O. AND O. MEETING

The President inadverently wrote to a few of the members of our society that it was his intention, together with the other officers, to make the approaching meeting the best ever. One of the ex-Presidents came back with the low-down insinuation that no meeting could be better than his, so we have to rise up and assert that it is still our intention to make his meeting look like the proverbial "thirty coppers"! Any man who fails to come across with his part of the program will surely feel about as small as Maeterlinck's conception of an honest man. So, gentlemen, get your skates on, for you have to go some to keep up with the gang this time. With Haseltine as Grand Commander of the local Committee on Entertainment, you are sure of all that is "up to the minute" in this line. Headquarters at Hotel Sherman, and

the O. and O. meetings will be held in the quiet, beautiful West Room of that magnificent structure. There are committee rooms adjoining, and we will be only a few steps from the wonderful crystal room in which the Institute proceedings will be going on. No better place could have been chosen for our deliberations than this and the fellow who fails to be there will miss something. This is the year to get into the game. There will be something doing all the time.—D. W. M.

ORTHODONTIA

It is with pleasure that we welcome to this number of our Journal an article from the able pen of our friend, Dr. Martin Dewey, of Kansas City. Dr. Dewey is a near relative of ours because of his allied interest in our specialty. He presents us with a timely article calling our attention to the fact that many of our operations for removal of tonsils and adenoids fail to produce the desired results because we overlook in many of these cases the fact that irregularities of the teeth and maxillary processes are oftentimes as responsible for mouth breathing and for the recurrence of the growths as are the growths themselves. It is a good time to begin to refresh our memories and to call to mind some of our failures in our attempts at restoration of correct nasal respiration. We have all had them and we might as well admit it, so let us give the orthodontist a warm reception to our midst and profit by his valuable suggestions. These two specialties should be more closely related. The rhinologist must remove respiratory obstruction and the orthodontist correct the dental deformities, else we will not correct all of our many cases of mouth breathing.—D. W. M.

SCIENCE

Recently a learned anatomist discovered, in the abdomen of a cadaver, an anomalous condition of unusual interest. Naturally he discussed it with many of his colleagues, among whom happened to be an embryologist of note and an ordinary practitioner. All were very much interested in the unusual condition. The embryologist said, "If it can be explained from the standpoint of embryology, all right. I do not care what you practical men think about it." The practical man said, "Could the condition possibly have had anything to do with the functions of alimentation? Could the development of such a condition interfere with the natural processes of peristalsis?"

Which question should receive most serious consideration? Are we engaged in science for the pure love of discovering "why is it," or are we delving into scientific research for the purpose of benefiting humanity? The practical man says, "Can its presence have any possible bearing upon the health of the individual?" The "scientific" man says, "Can its presence be explained by embryological phenomena?" In the meantime the patient is dead and the layman says, "What killed him?" And while the layman is talking, let us hear what he has to say about this science business anyhow in the following clipping, from the current press, entitled "Such are Science."

"Sometimes we wonder and ponder 'Why is a scientist?' The high-brow, be-spectacled species of superintellectual so often places his abstractions so concretely obtuse in form that the mere human is nonplussed.

"But here comes one who seems to have earned the right to demand a respectful hearing from all of us.

"For does he not give us much reason to be cheerful and optimistic?

"We must give the credit for the promulgation of the joyful tidings to the Smithsonian Institution, which in commenting upon its own annual report describes a paper from the pen of a professor of Bordeaux, France, the temporary capital of the French republic since the Kaiser's famed excursion towards Paris. This professor has been investigating, since 1903, the thickness of the film that overspreads water when drops of oil are placed on the aqua pura. He finds that the thinnest film of oil which can exist without bursting is one and one-tenth millionths of a millimeter, or about one-half the thickness of a well regulated soap bubble.

"Another learned investigator has spent years in researches to determine the cause of the 'well-known ripple marks left on the beach by the ebbing tide.' And, listen, he 'attributes the cause of the depressions to the action of the water alone.' Mar-vel-ous!

"But wait, we had almost forgotten the fellow we started out to tell about—Professor Jaumann, a German. The Herr Professor tells us about 'the modern ideas on the end of the world.' And it hasn't anything to do with the war in Europe, either. In fact, we are told that the professor presents 'new and more reassuring views which predict a future of limitless extent.' He assures us that the

sun will not cool off and thus bring the development of civilization to a stop, but that, since the radiation from the sun is stable, the intellectual and physical evolution of humanity will continue for immeasurable time, and eventually may reach to heights hitherto unimagined.

"And now, this great burden having been taken from your mind, you can go about your daily task without worrying over it any more.

"'Such are science!' as Artemus Ward was wont to say."—D. W. M.

THE ASSOCIATE EDITOR FOR MAY

Dr. Philip Rice, of San Francisco, Cal., will be the associate editor of the May Journal. We make this announcement with much pleasure, and assure our readers that the standard set in the first four numbers of the Journal for 1915 will not be lowered in the fifth. You may look for something unusual as well as high class from the Pacific Coast in May.

Sublingual medication. Wm. Paulson (*Brit. Med. Jour.*) calls attention to the great usefulness of this method and to the fact that it seems to be so little known. Any soluble medicament, especially the alkaloids, are even more readily absorbed from the mucous membrane beneath the tongue than from the subcutaneous tissue; furthermore it is safe, cleaner and quicker. He says that in the South African war it was used extensively, and that one physician told him that he could treat fifty wounded soldiers in the same length of time that he could prepare to give a hypodermic to one.—*Critic and Guide.*

THE STREPTOCOCCUS QUESTION

Dean W. Myers, M. D.,
Ann Arbor, Mich.

HOW rapid has been the rise of this little germ to a position of importance in the bacterial world! We have known him for a long time. It has, however, been a comparatively short time since he began to assume the role of "exciting cause" of almost everything. He is of particular interest to us in that his inroad into the human system is so frequently through that vulnerable point, the much abused tonsil. His peculiar tendency to produce epidemics has attracted our attention. For many years we have known and described a condition of the tonsils which we have been pleased to classify as septic sore throat and have recognized its epidemic nature. For many years we knew little of the etiology or pathology of this condition. Now the mere mention of epidemic sore throat brings with it the accusing interrogation, is it the streptococcus? Our knowledge of this organism is still probably very incomplete, but we have come to recognize the conditions with which he is connected as very grave. We no longer look upon a streptococcus sore throat as a purely local condition, but as one that may seriously involve the entire system and may even result fatally by general infection. The source of infection may be from almost anything, including the air we breathe, the milk we drink. This germ thrives particularly in our milk cans and grows fat in the unclean corners of our numerous dairies. As early as 1902 our friend Nash, in the *London Lancet*, described an epidemic of sore throat occurring in a number of families using milk from a certain supply. There were in all forty-two cases affected. Investigation showed that many cattle in this herd were suffering from mastitis, and that the milk from these cattle was run through a separator with the idea that the cream was germ-free. The clinical features of these cases were described as being "characterized by a large amount of swelling of the tonsils, fauces, palate and uvula." The posterior pharyngeal wall was also involved in many cases. The affected spots were bright red

and tonsils presented many spots and patches of exudation. Distinct ulcers were frequently present on the tonsils and fauces, giving rise to difficulty in swallowing. The general symptoms consisted in severe headache, dizziness, backache and pains in the limbs, very much like a bad attack of influenza. The temperature was generally one hundred and two or one hundred and three, and a few cases ran up to one hundred and four and five. The tongue was dirty and there were gastric and intestinal disturbances, with great weakness and in many cases marked debility for weeks. In one instance quinsy developed.

A number of important epidemics of sore throat have been noted within the past few years. Among these are the Christiana epidemic in 1908, the Boston epidemic in 1910 and the Chicago epidemic in 1911 and 1912. There were also epidemics three years ago in Baltimore and Philadelphia. In Baltimore there were two thousand cases and sixteen deaths, of which nine were caused by peritonitis. As in Boston and Chicago, the cause of the Baltimore epidemic was improper pasteurization of milk. In this connection it is interesting to review the first definite record of epidemic sore throat in this country by Winslow on the Boston outbreak during the summer of 1911. Quoting, we have: "The first cases were reported in Boston and its suburbs on May 11, 1911, and during the next fifteen days about fourteen hundred cases developed. The onset of the disease was characterized by three classes of throat picture; that is, first, profuse redness, second, white follicular patches, and third, diphtheritic membrane. The latter two were frequently edematous. Inquiry established the fact that the disease was epidemic in Boston and in the suburbs. No cases were occurring elsewhere in the state. Further, it was limited to certain districts in the city and was concentrated in the families affected. Of those affected fifty-six per cent. of the families had one case, twenty-two per cent. had two cases, eleven per cent. had three cases and eleven per cent. had four or more cases. It was about three and one-half times more prevalent among females than males and most prevalent among adults between the ages of sixteen and forty-five. The intensity of the disease increased with age, the infection being very mild in children and most fatalities occurring after the age of fifty-five. The mortality was about three and five-tenths per cent.

In an effort to locate the causative agent all theories of the effect of dust, climate and other local physical conditions as well as direct infection from person to person were ruled out by the concentration of cases. It was soon discovered that the distribution of cases coincided with the milk distribution of a single milk supply, the Deerfoot Dairy. This dairy has two main supplies at Southboro and Northboro. The supply distribution from Southboro corresponded to the distribution of the disease, not only in Boston, but in the suburbs of Southboro and Marlboro. About ninety-three per cent. of all infected cases had been known to use this milk. Expert examination of the cattle at this dairy showed no instance of disease in cattle, but it was learned that several people in the locality and on the farm had the disease several weeks previous to the outbreak of the epidemic. A very early case was the daughter of the dairy engineer, who was himself affected shortly after. On May 1st, nearly two weeks before the outbreak of the epidemic, the woman who received or mixed all milk was ill with sore throat.

The Deerfoot Dairy is one of the ideal dairy farms in this country and its reputation had been that no infection or contagion had been traceable to its product during twenty-eight years. Its cattle are regularly inspected by an expert veterinarian and a bacteriological examination of the milk made eight times each month by an expert. All milk from any diseased udder or even from cattle where there is sickness among the men handling the milk is excluded. To promote honesty among farmers selling them milk the company offers to pay for the usual daily amount without delivery in all cases where there is contagious disease on the farm, provided the patron will immediately notify the company. This condition holds regardless of the severity of the case. An excellent handling system prevails at the dairy, the only human contact being where the receiving clerk smells the milk for acidity and pours it into a pipe leading to an enclosed mixing room. Thus it will be seen that milk may readily become a carrier of virulent infection and that the cow is not always the source of the disease.

In reviewing the reports of Drs. Clapp and Miller we find, first, that it is conservatively estimated that over ten thousand persons in Chicago were victims of epidemic sore throat in December, 1911.

Second, of the total of six hundred and twenty-two cases that were investigated, five hundred and thirty-nine, or eighty-seven per cent, were users of milk from a certain dairy, and of nineteen fatal cases investigated, fifteen, or seventy-nine per cent., were users of this milk. Third, a comparison of the prevalence of sore throat among the users from this dairy with that of consumers of milk from another dairy in the same neighborhood shows that the morbidity ratio was fourteen times as great among the former as among the latter. This ratio prevailed in three widely separated districts of the city. Fourth, an epidemic of mastitis involving four and six-tenths per cent. of cows supplying milk to this dairy occurred during the winter months and was worse during the Christmas holidays. Fifth, sore throat of the epidemic type was prevalent among the farmers and milkers supplying this dairy. Often bovine mastitis and human sore throats prevailed in the same farm and at the same time. Sixth, a virulent streptococcus was isolated by Dr. Davis from the milk of a cow with chronic mastitis and from the throat of a girl on the same farm who had been ill with sore throat and arthritis. Seventh, the pasteurization records revealed a remarkable degree of failure to maintain a proper temperature. The days on which the most striking failure of pasteurization occurred shortly preceded the great outbreak of sore throat.

Coming nearer home we may review somewhat the epidemic occurring in Ann Arbor about two years ago. In all there were probably six hundred cases affected. The illness varied from superficial septic sore throat to conditions characterized by great congestion and swelling with membranous formations, universal edema of the throat structures, suppuration, ulceration and fatal purulent meningitis, peritonitis, and general septicemia. The onset was usually sudden, prostration great, temperature rising rapidly to one hundred and two or one hundred and three and in some cases to one hundred and four and one hundred and five. Severe headache, slight soreness of the throat and some difficulty in swallowing, together with pallor and the appearance of considerable illness, were usually the first warning symptoms to the patient. In an excellent report of a portion of this epidemic, Dr. Ferris N. Smith, instructor in oto-laryngology in the university, clas-

sified his cases into four distinct varieties. First, superficial septic sore throat; second, membranous septic inflammation; third, edematous inflammation, and fourth, suppurative cellulitis.

The superficial variety embraced the great majority of these cases. The onset was sudden and severe. The patient had a sudden intense headache, occasional pain in the back and legs, sore throat, increasing difficulty in swallowing, and marked prostration. He was pallid and appeared to be afflicted with some grave illness. The pillars, tonsils, posterior pharyngeal wall, soft palate and uvula were very red and swollen and the uvula frequently edematous. The fever rarely exceeded one hundred and two degrees, the pulse was full and relatively slow, while the respiration was slightly increased. Only infrequently was there a moderate leucocytosis and the urine often presented a considerable volume of albumin and granular casts. These cases ran a course from three to eight days and left the patients much exhausted. One such case in this series was complicated by an acute suppurative otitis media and mastoid tenderness without leucocytosis. Another died of streptococcus septicemia in four or five days. A third case developed cervical cellulitis some days following the throat infection. This suppurated and the patient died of purulent meningitis following septic thrombosis of the jugular vein and lateral sinus, and a fourth case developed a fatal purulent peritonitis. In both of these latter cases the infiltrated areas in the neck were incised for drainage. No pus was discovered at the time of the operation, but free purulent discharge occurred some hours later. It was said to have been this group of cases which gave rise to the majority of deaths in other epidemics, the fatal condition appearing some days after the apparent cure of the patient.

The membranous septic inflammation was characterized by all the signs and symptoms of the first group plus the formation of a dirty grayish-white membrane, which was irregularly disposed upon the tonsils, pillars, soft palate and pharyngeal wall. It peeled off easily without bleeding and consisted largely of pus cells, streptococci and detritus. Various degrees of edema were frequently associated with this class and most frequently noted on the uvula and pillars. A typical example of this group entered the clinic with a temperature of one hundred and four degrees, pulse one hundred and four, grayish-red throat, patches

of membrane on the tonsils, pharyngeal wall and soft palate, marked edema of the uvula and pillars with bulging of the anterior pillar on the left side, no leucocystitis and acute septic nephritis. Two hours later the temperature was one hundred and three and four-tenths and pulse ninety-two. The pulse did not exceed one hundred again during the disease, despite temperature of one hundred and three and four-tenths. Frequently the pulse was below ninety with such a temperature. Eight hours after admission, the membrane had disappeared, the throat was scarlet in color, the patient had typical strawberry tongue and erythema, which covered the neck and throat, which was not noted in the folds of the body. His whole appearance strongly suggested scarlet fever. Twelve hours later a picture of scarlet fever had disappeared, the temperature assumed a remittent type, ranging from normal to one hundred and four, with a slow, full pulse averaging eighty-five. Small submucous abscesses appeared on the margin of the palate and base of the uvula. The whole throat was grayish-red. During the next two days these abscesses ruptured, leaving superficial ulcers, and other ulcerated areas appeared upon the pillars and posterior pharyngeal wall. The temperature gradually declined to normal the succeeding four days, and the ulcers, excepting an area including the whole anterior aspect of the uvula, healed. The patient was discharged on the ninth day following admission.

Another case of this type had considerable edema, which was largely confined to the epiglottis and trachea, together with abscesses at the base of the tongue and in the false cords; also a diffuse board-like cellulitis in the neck, which reached the plane of the chin and later located within the outlines of the thyroid glands. He had a remittent temperature, characteristic slow pulse, no leucocytosis and several brief suffocating attacks due to edema. During two days the patient suffered a constant delirium with a temperature not exceeding one hundred and one. Later he developed leucocytosis, and abscess at the base of the tongue which ruptured and was followed by recovery.

The third class of cases—edematous inflammation—presented the most striking pictures. The onset, excepting the congestion and swelling, was identical with the superficial variety. The fauces and pharynx were gray and edematous, the swelling of the tonsils enormous and proceeded rapidly until the oro-pharynx was completely shut off from

the mouth, necessitating nasal feeding. The temperature did not exceed one hundred and one and the pulse was somewhat more rapid than in the other groups. Toxic nephritis followed the onset shortly. This condition persisted from three to eight days without glandular involvement and disappeared as rapidly as it came. The prostration in this class was very severe.

The fourth class of cases—suppurative cellulitis—was identical in onset with group one and the signs were any combination from group two and three. The suppurative areas were localized in the throat, larynx, accessory sinuses or neck and were followed by suppurative processes in any part of the body. The local epidemic produced small suppurative areas in the fauces, larynx and neck, followed in two cases by purulent meningitis and peritonitis. One case was complicated by empyema of the antrum of Highmore and frontal sinus.

Among the cases reviewed in this series the following conditions were noted:

18 cases with simple septic throat.
3 cases with membranous septic throats.
3 cases with edematous septic throats.
3 cases with mixed edematous and membranous sore throats.
3 cases with suppurative cellulitis.
1 case with ulceration of faucial and pharyngeal structures.
6 cases with diffuse cervical cellulitis.
1 case with discrete glandular enlargement.
1 case with laryngeal abscess.
2 cases with retrotonsillar abscesses.
1 case with acute suppurative otitis media.
1 case with mastoid involvement.
8 cases with acute nephritis.
2 cases with delirium.
1 case with meningismus.
1 case with meningitis (purulent).
1 case with purulent peritonitis.
1 case with streptococcus septicemia.
1 case with board-like swelling confined to the thyroid gland.
3 cases with moderate leucocytosis.
3 cases with pulse rate exceeding one hundred.

7 cases with remittent temperature lasting several days.

3 cases with unilateral involvement.

The most striking features of all these cases were a comparatively slow, full pulse, which was out of any proportion to the fever, the almost invariable absence of leucocystosis, the frequency of a marked toxic nephritis, and the extensive cervical cellulitis, which rarely suppurated.

As to the specific organism responsible for septic sore throat, it seems definitely established that the streptococcus is largely to be considered. The presence of the streptococcus in the great majority of normal throats has become definitely established by various observers. At times these organisms acquire varying grades of virulence, and are responsible, in part at least, for a surprising number of disease conditions.

In a recent discussion of this subject, Professor Hecktoen, of Chicago, said: "The important thing in dealing with septic sore throat is to recognize its epidemic character at once. Pus sore throat is now a reportable disease in Chicago. Milk offers a peculiarly favorable breeding place for the streptococcus organism. This organism may be introduced into the milk from two sources: First, from the cow, or, second, from human beings. From the most careful experiments it has been determined that streptococci are present in nearly all milk. In twelve tests in perfectly healthy cows only five samples were obtained free from the organism. It is the common cause of the souring of milk. For some reason the udder of even a healthy cow seems to offer the same conditions for the growth of the organism as does the human tonsil. But even in cases in which milk is not infected by the cow it may become infected in the handling it receives before it reaches the consumer. A mere cough over a pail or the insertion of the finger into an otherwise sterile can may contaminate milk otherwise pure. The only safeguard is proper pasteurization."

I desire particularly to call attention to the work done by Dr. Mellon, in connection with the Ann Arbor epidemics, reported by him in an able article appearing elsewhere in this Journal. Dr. Mellon has developed a new technique for the early isolation of the streptococcus found in these conditions and is producing some exceedingly interesting results with treatment based upon these findings.

A METHOD OF EARLY DIAGNOSIS OF STREPTOCOCCUS SORE THROAT.

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THE presence of the streptococcus in the great majority of normal throats has become definitely established by various observers. At times these organisms acquire varying grades of virulence, and are responsible, in part at least, for a surprising number of disease conditions. This list has been gradually increased until it has now become quite formidable.

The presence of this organism in diphtheria, measles, scarlet fever, Ludwig's angina, acute purulent rhinitis, etc., is well known. The researches of Poynton and Payne first showed its relation to acute rheumatic fever, which so frequently follows follicular tonsillitis. The work of Davis, of Chicago, is important evidence for the streptococcic etiology of much chronic arthritis. Light has begun to dawn on the etiology of pernicious anemia. Sir Wm. Hunter first pointed out its probable relation to the mouth infections, especially the not uncommon condition of pyorrhoea alveolaris. Allen, of London, considers the streptococcus intimately related to pyorrhoea. It must be admitted that the streptococcus appears to be the chief infective agent in at least eighty per cent. of all cases. To quote from Allen, pp. 193-194: "We have already seen that there is probably an intimate connection between this disease and certain forms of arthritis; its connection with follicular tonsillitis, post-nasal catarrh, the various bacterial diseases of the pulmonary tissues, gastritis, enteritis and anemia, simple and pernicious, is no less definite." Likewise the few cases of salivary gland infection have been of the same origin.

In rhinitis, Allen, although recognizing the streptococcus, is inclined to place the pneumococcus, catarrhalis, paratetragenous and Friedlander's bacillus in the bacteriological foreground. His vaccines are mixtures of the above organisms with the streptococcus, but it is not at all certain from favorable clinical results alone that all these organisms play an etiological part. The main evidence for my belief is

found further on in this article. However, it is quite noteworthy in this connection that the inner and middle ears as well as the brain, which are so often infected by direct extension or metastasis from foci in the nose and throat, should show with such constancy the streptococcus and mostly to the exclusion of other organisms. Although such evidence cannot be dogmatic, our results in the throat infections, in which such a chaos of organsims is often present, give rise to the logical suspicion that the bacteriology of rhinitis, in common with other similar conditions, will ultimately be narrowed down considerably and in consequence fewer kinds of organisms will be used in the vaccines.

The conclusions of different observers regarding the presence of the streptococcus are interesting. Libman's testimony is as follows, and harmonizes with that of Suepfle, Deutch and Wittmank: Out of thirteen cases of sinus thrombosis the streptococcus was present in ten, and the remaining cases were negative. In twenty-four cases of meningitis the streptococcus occurred in seventeen, the pneumococcus in four, B. coli in one, B. tuberculosis in one, and B. proteus in one. In fifty-five cases he made blood cultures, twenty-two of which yielded the streptococcus; sixteen died and four recovered.

In post-nasal catarrh the streptococcus is an exceedingly prominent organism. This disease is often associated with pyorrhoea or caused by it, and very naturally the prominence of this organism obtains. In acute bronchitis, and also in chronic bronchitis and asthma, it is the same story, and in certain forms of the latter Allen lays especial stress on the streptococcus maximus, which is often the only organism present. In pneumonia it plays an important part and in empyemata its importance is paramount.

From the observations of the past few years, to which I have referred, it is seen that this organism is every day assuming a more significant role in pathology. The studies in regard to it for a considerable length of time showed it as a cause mainly of the most fulminating of the acute infections. Later it was found associated with other conditions of unknown etiology, as scarlet fever and measles. Closely following these discoveries, its field of activity was extended to the acute arthritides; and presumably further clinical research will rob chronic rheumatism and arthritis deformans of much

of its idiopathicity. And now from its possible relation to some forms of simple and pernicious anemia and chronic nephritis this organism seems destined to encroach etiologically on some conditions supposedly constitutional.

If I have followed correctly its footprints from Fehleisen's time to the present, and indicated conditions in which its connections may be more clearly shown by future work, it behooves us to be able to recognize it in its pathological guise at the earliest possible moment.

For two main reasons do I emphasize this necessity: First, because when it is localized or its virulence is mild much can be done to prevent further depredations; and second, because such a great number of these untoward conditions have their beginning in such simple derangements. They are so common as to be almost unnoticed. It is the old case of the familiarity that breeds contempt. Ordinary colds and sore throats, the bugbear of so many individuals, have received inadequate attention because they were conceived to be self-limiting, and would recover without interference. If by interference one means nasal alkaline sprays, strong gargles, silver nitrate, ammonium chloride, peroxide of hydrogen, and crudest of all, massive doses of hexamethylamine causing the elimination of a substance which harms the tissues as much as it does the organisms, then the self-limiting theory seems entirely correct. But the fallacy of such a doctrine becomes apparent when one sees how markedly the course of such a seemingly innocuous condition as sore throat can be shortened; and especially when one sees the sequelæ of such conditions and the results of inadequate treatment. That they are not at all innocuous nor are they always self-limiting, the chronic arthritides, the rheumatisms, the anemias, etc., bear testimony.

When it becomes necessary to establish a diagnosis of streptococcic sore throat, the fact that this organism is present in the great majority of normal throats is a source of confusion rather than an aid. If we can rule out diphtheria and Vincent's angina and find the streptococcus almost pure in the smears and cultures, the diagnosis is not difficult. But there are many cases in which we can find but very few chains, long or short, by ordinary culture methods, and yet we have reason to believe that the condition is streptococcic.

We should be able to ascertain not only that the streptococcus is present but also to have some approximate idea just when this group of organisms purpose to set up a disturbance. That this can be done within certain limits I hope to be able to show. The majority of data for my contention has been derived from an epidemic of streptococcic tonsillitis which spread over Ann Arbor two years ago.

If one makes a direct bacteriological examination of any normal throat a variety of organisms, morphologically, is encountered; Gram negative diplococci of the catarrhalis type, other small diplococci grouped mainly in clumps, bacilli, occasionally short and long chains of streptococci and a variable number of spirochaetes and leptothrices, the former being probably of the refringens and dentium types.

If we rule out the the known specific anginas above referred to, the majority of cases of sore throat present about the same picture. True, the number of organisms seems greater, especially in the presence of a visible exudate, and the relative number of the different varieties may be changed. Nevertheless, in very many instances a close examination either direct or cultural (eighteen to twenty-four hours) does not show enough deviation from the normal to warrant a definite diagnosis.

Particularly was this the condition of affairs two years ago when an epidemic numbering six hundred cases in all visited Ann Arbor. The truth of my statement regarding the confusion as to its origin is somewhat vindicated by the many genetic speculations at that time. It was called first Vincent's angina, then malignant sore throat, and some reputable persons thought that it was associated with a new variety of diplococcus which seemed to take the most prominent place in the bacteriological foreground.

Some time previous to the occurrence of this epidemic there occurred a much smaller one of ten cases among the nurses of the hospital which, however, furnished sufficient material to hypothecate a better method of diagnosis than had been known up to this time. Abundant opportunity for the vindication of such hypothesis came later when the more pretentious epidemic appeared.

Report of Epidemics.

In the first small epidemic the patients were, as a rule, seized suddenly with high temperature, a very sore throat, slow and easily

compressible pulse, headache and pains in the muscles and joints. In others the onset was decidedly more gradual, and only after five to ten days had passed was the condition recognized as anything but an ordinary cold. In some the acute articular feature was marked; in others it was entirely absent. The throats showed much injection and the tonsils were swollen, but in only about fifteen per cent. of the cases was an exudate present. This was creamy in color, and easily detached from the musoca. Practically all the throats were hypersensitive. Direct examination showed a variety of organisms, but none of these could be conclusively diagnosed as streptococci by the ordinary methods of examination.

Six of the cases received the specific vaccine. The dose varied from five to fifteen million. In no case was more than two doses given. Three of the cases, having had a temperature of one hundred and four to one hundred and five degrees, recovered so as to be able to be out in seventy-two hours; two were detained four days, and the third, which had marked polyarthritis with effusion and generalized skin rash, was detained in bed for twelve days. This case had developed symptoms of acute articular rheumatism before any vaccine was given.

Four of the cases refused the vaccine and depended on throat gargles and internal medicine. None of these showed arthritis. Notwithstanding this the temperature persisted for seven to ten days; two were not able to be up for twelve days and the other two for nineteen days.

The Larger Epidemic.

The experiences of this epidemic were practically the same as in the foregoing, but a great many more cases were tested. We had in all sixty-five cases from which we can draw deductions. There were many others treated with both vaccine and internal medication, but these I do not care to cite.

It is a fact of some significance that the six to eight cases which died of streptococcic septicemia were at no time treated with vaccines. Of our entire sixty-five cases all but three seemed to show immediate response to the treatment. One of these was a case of

acute inflammatory rheumatism following tonsillitis. It was the third attack in eight years, the patient having a well compensated mitral lesion.

Twenty of these cases having a temperature of one hundred and four or above when first seen had a normal temperature within seventy-two hours after the first injection of the vaccine. Four of these cases had been sick from eight to ten days and had received no treatment except calomel, phenolphthalein and saline purges. Twenty-six of the cases were discharged in four days and the remaining nineteen in from seven to nine days following entrance. The dose of vaccine never went above fifteen millions.

Approximately seventy-eight per cent. of the entire sixty-five cases showed the morphological disparity between the predominating organisms in the smear and the ones that appeared in the first colonies. Of the remaining twenty-two per cent. sixteen per cent. showed pure cultures of hemolytic streptococci, while only six per cent. did not conform to the general rule. These were four in number, two of which failed to receive any benefit from the vaccine, while the other two obtained decided relief.

The method used is as follows: With a sterile cotton swab get a representative idea of the organisms present by rubbing it over the tonsils, palate, and as much of the retro-tonsillar region as possible. Make smears on cover glasses and cultures on blood agar. (This is prepared by adding one part whole human blood to ten parts two per cent. glucose agar.) In place of incubating these tubes for eighteen to twenty-four, or even twelve hours, as is usually done, it is preferable to make an examination of the very first colonies that appear on the medium. Eight or ten of these should be stained in Loeffler's methylene blue and examined. The tube is then incubated for eighteen to twenty-four hours and a representative smear of the growth is again examined microscopically.

It was evident that a marked morphological dissimilarity between the smears and the first colonies existed. A twenty-four hour culture showed about what one would reasonably expect to find from a consideration of the variety of the organisms in the smear.

It was interesting to find that the first colonies were in most cases pure cultures of streptococcus, while a representative examination of

the growth in eighteen to twenty-four hours showed such a mixture morphologically that no satisfactory diagnosis could logically be given.

Aside from the dissatisfaction with the ordinary method the basis for the adoption of the above procedure lies in *a priori* considerations. Since bacteria are supposed to flourish in the body only in case the soil is favorable for their protection, the method of transferring some of this soil to artificial media really represents an attempt to make use of this tenent. In this particular instance, assuming that the underlying infection is streptococcic, it is possible that in case the virulence of this organism was increased such an event might be roughly measured by the relative length of time it required to appear on the medium.

A second element that I consider of importance in this connection is the length of chains that appear. I am perfectly aware that this contention, considered as a basis of scientific classification, is untenable, and that the length of the chains can be reversed at will by alteration of the environmental conditions. It was von Lingelsheim who first sought to differentiate species of streptococci by this rough method. We took particular attention to guard against this error by making our media as constant a factor from every standpoint as possible. It makes a difference whether whole blood or blood serum is used, as the latter is certainly more conducive to the formation of long chains. In experiments being done at present whole blood and serum agar are being used in a parallel way, but of course not interchangeably.

Although the virulence of the infection seems to bear a direct relation to the length of the chain such relation is by no means proportionate. Its limitations, some of which I have indicated, must always be taken into consideration. In the sense of Simon, the term "virulence" has undergone a revaluation until at present it is considered as good reproduction capacity on the part of an organism, which often is but may not be an index to its toxicity. And thus, although these streptococci may show greater reproductive powers their toxicity may not be proportionately increased.

We have demonstrated to our satisfaction that many of these diplococci seen in practically every throat smear, normal or pathological, belong to the streptococcus family. Often they are morpholog-

ically inseparable from the staphylococci. Some are streptococcus viridans, others are hemolyzing. The fact that the streptococcus occurs in the body in diplococcus form has of course long been known. The staphylococcus citreus is also found in a certain percentage of cases, but has in no pathological case appeared in the first colonies, even though it may have practically crowded out the streptococcus later.

In a certain percentage of normal cases the first colonies appearing on whole blood agar are diplococci or they may be grouped so as to resemble a staphylococcus. This corresponds to the smear. But on serum agar or serum bouillon these same organisms when grown directly from the throat or as transplants form short chains of from six to twelve individuals. And, vice versa, involution forms of the same thing can be observed when they are again transplanted to plain agar.

In order that we might check these observations we first treated every possible case with vaccines and, secondly, ten days to three weeks after they had fully recovered the same bacteriological examination was made and results compared. In some cases we made examinations at four or five day intervals after the temperature had subsided.

Treatment.

All cases in the epidemic were treated with a stock vaccine of a very virulent streptococcus isolated from a case of septicemia. Before proceeding further I wish to state that a stock vaccine was used merely on account of the fulminating character of the infection, since we did not care to waste any time in preparation of the autogenous. In every possible case I am an ardent advocate of the latter, and in many cases being treated at present the stock vaccine has failed utterly only to yield to the autogenous.

The dosage varied from five to fifteen million, and in practically all cases the reaction was not only logical but constitutional as well. The vaccine was prepared as follows: A temperature of fifty degrees C. for one hour was used with a suspension of not over two hundred and fifty million in a test tube which was not over 12 mm. wide. This nearly sterilizes. Addition of 0.1 per cent. formalin insures safety. Controlled for forty-eight hours on serum sugar. In this way my clinical results have been much better, apparently, than with either excessive heat or the galactose method of sterilization. I think that

every one must appreciate that dosage with the streptococcus is purely a relative affair, depending on the virulence of the organism, vaccine preparation, etc.

Subsequent Bacteriological Examination.

At the end of three weeks eighty-seven per cent. of the cases examined showed the first colonies to grow only in diplo-form and a few short chains of seldom over four individuals. In the remaining thirteen per cent. the first colonies showed mainly short-chained streptococci, but in about half of these the patients had a chronic tonsillitis and in addition previous mutilation with the tonsillotome. The tonsil had not been entirely removed and probably the resulting scarring prevented free drainage of the crypts that remained. Even in these cases there appeared none of the very long tortuous chains which had been present on the first examination.

At the present time I have one case which has the variety of tonsils above described, and whom I have been treating for recurrent sore throat for the past year. A record of some recent notes on his case follows:

Mr. Jewell. November 7, 1913, culture taken 10:45 a. m. from both tonsils. Tonsils slightly inflamed.

Smear.—Only few organisms among epithelial cells. Within epithelial cells deeply staining bacilli, some of them in short chains. Then there were colonies of diplococci, most of them very small, but some very large, and staining deeply. Only one streptococcus found. (Morphologically).

First colonies.—Streptococci only, with the exception of one colony of large and deeply staining diplococci. The streptococci come in short, also in long chains. Colonies examined at 4 p. m., November 9, 1913.

Twenty-four hour culture.—Large majority are diplococci of all sizes and staining qualities; some of them three or four times as large as the average, and staining extremely dark. Quite a number of the diplococci are arranged in chains, but there were only a few organisms found that could be designated as true streptococci.

November 10, 1913. The above described large and deeply staining diplococci prove to be Gram negative, while the rest of the cocci (streptococci) are Gram positive.

November 7, 1913. Culture taken from small yellowish patch behind right tonsil at 11 a. m.

Smear.—Numerous spirochaetes (refringens) and leptothrix, but mostly diplococci. Very few bacilli.

First colonies.—Are mixed already. The majority of the organisms, however, are diplococci, quite a few of them being very large and staining very dark. First colonies examined at 4 p. m.

November 9, 1913, 11 a. m. *Twenty-four hour culture.*—Diplococci of all sizes and staining qualities, part of them extremely large, three to four times the average size and staining very dark. There are a few true streptococci and quite a few chains of diplococci. Very few bacilli.

November 11, 1913, 10 a. m. Patient states that his throat feels considerably better. The tonsils show signs of chronic tonsillitis and look rugged. Culture taken from over both tonsils.

Smear.—Very few organisms among the epithelial cells. Mainly small diplococci and micrococcus catarrhalis. A few bacilli and spirochaetes.

November 12, 1913, 10 a. m. *First colonies.*—Streptococci in the majority, short chains. It is interesting to notice that some of the streptococci are arranged in chains of diplococci, the single individuals of which are considerably larger than those of the true streptococcus chains and seem to be just on the point of splitting up into ordinary diplococci.

November 13, 1913, 11 a. m. *Twenty-four hour culture.*—Very small diplococci, quite a number of them arranged in short chains of about five individuals. Some true streptococcus brevis, and a few catarrhalis.

November 11, 1913, 10:30 a. m. *Compare with the above.*—Culture taken from over both tonsils, care being taken to touch the little patches behind the tonsils.

Smear.—Relatively few organisms among epithelial cells. Great majority diplococci, among them the catarrhalis. Then there could be found a few short chains of streptococci, most of them formed by diplococci and just on the verge of dividing into such. Furthermore, there are quite a large number of bacilli of all sizes and some spirochaetes.

November 12, 1913, 9:30 a. m. *First colonies.*—Streptococci.

November 16, 1913, 11:00 a. m. *Twenty-four hour culture.* Small diplococci and short chains of diplococci.

November 16, 1913., 11:30 a. m. Patent still has small yellow patches behind right tonsil. Smear taken from over and behind both tonsils.

Smear.—Most prominent organism is large catarrhalis. Many true streptococci, also diplo-streptococci. Few diplococci, leptothrices, bacilli of many shapes and spirochaetes.

November 26, 1913, 6:00 p. m. *First colonies.*—Diplococci arranged in long chains of streptococci.

November 27, 1913, 10:00 a. m. *Twenty-four hour culture.*—Diplococci and catarrhalis; staphylococci and few bacilli. Some of the diplococci arranged in short chains.

November 13, 1913. The throat looked normal and patient feels unusually well. The color is not a bright red as before. The tonsils have receded until they are on a level with the rest of the throat. Formerly they protruded, even though at some previous time they had had been sliced off.

Smear.—Showed but very few organisms of any kind. Only an occasional epithelial cell contained a very few diplococci.

The first colonies.—Mostly bacilli, although there are also a few M. catarrhalis and small diplococci.

The twenty-four hour culture.	1st. Serum agar.	Mostly diplococci, grouped as staphylococci. Some bacilli. The condensation of water shows a pure culture of short-chained streptococci. Transplants of the diplococci in bouillon give short chained streptococci.
	2d. Whole blood agar.	Practically the same as on serum agar. Condensation water not present.

The serum agar on which this culture was grown contained purposely a large amount of serum (11), for the obvious reason that it is more conducive to the formation of chains than any other solid medium. Since only staphylococci resulted (morphologically), the transplants were made in bouillon, which is, of course, an ideal medium

for the chain propagation. It is not unusual for normal throat to show streptococci on a rich serum medium and the fact that this throat did not is a very strong evidence for my contention, especially in light of the fact that previous to this time we had never failed to get anything but chain formation. Again, these findings are in perfect harmony with his clinical condition, as the patient testified that his condition was better than it had been in over a year.

Supposedly Normal Throats. (Controls.)

	Smear.	First colonies.	24-hour cultures.
No. 1.	Mostly diplococci, no strep., few bacilli.	Mostly bacilli; then diplococci, no streptococci.	Diplococci, Streptococci, no bacilli.
No. 2.	Diplococci and bacilli in about even number. No streptococci.	Majority large bacilli. Large and dark staining diplococci. A few diplostreptococci.	Nearly all types. Diplococci, then bacilli, and a few streptococci.
No. 3.	Large and deep staining diplo cocci all over the field. No chained streptococci. Rare patches of bacilli.	All diplococci.	Mostly diplococci, staining faintly. Here and there are staphylococci. No real streptococci and no bacilli, although some clumps arranged in chains.
No. 4.	Mostly diplococci. Some arranged in chains. Few bacilli.	Diplococci and extremely long chains of small diplococci. No bacilli.	Typical diplococci. Some of them arranged in chains. Some staphylococci, no bacilli.
No. 5.	Mostly diplococci, few of them arranged as streptococci. Some bacilli.	Diplococci, partly in chains of very small diplococci. No bacilli.	Typical diplococci, partly arranged in chains. No bacilli.
No. 6.	Bacilli and diplococci in about even numbers. Some bacilli very large and rectangular. Some few streptococci.	Variously shaped bacilli, partly with poles. Diplococci also.	Diplococci partly arranged in chains. Long and short bacilli, some with bipolar stain and in long threads.
No. 7.	Mostly bacilli, long and rectangular, and sometimes in chains. Few diplococci.	Bacilli, long and rectangular.	Mostly diplococci, a few in chains, and very few bacilli.
No. 8.	Bacilli only.	Bacilli, long and faintly staining.	Bacilli only. Same diversity of type as before.

	SMEAR.	FIRST COLONIES.	24-HOUR CULTURES.
No. 9.	Typical diplococci of different size and staining qualities.	Long chains of thick and dark staining bacilli. Diplococci, same as before. Diplococci, same as before.	Diplococci, same as in smear.
No. 10.	Bacilli only.	Long bacilli, some few in chains.	Nearly all diplococci. The younger the colonies, the bigger and deeper standing the cocci.

November 8, 1913. Patient, Oliver. 8:30 a. m. Culture taken from over both tonsils.

Smear.—Does not show any organisms. Within the epithelial cells there are what seem to be short, thick bacilli. It is questionable, however, whether the majority might not be diplococci in short chains. Coccus catarrhalis and a few leptothrices. No bacilli.

November 10, 1913. *First colonies.*—Small diplococci, the majority of them arranged in short chains. The organism does not appear larger than one micron. There are, however, here and there, a few diplococci which are two to three times as large as the rest, and which stain considerably deeper. The growth came on very slowly, the tube having stayed, part of the time, in the ice box.

November 12, 1913, 2:00 p. m. *Twenty-four hour culture.*—Diplococci, a large number of them arranged as short chains of small individuals. Micrococcus catarrhalis and a few bacilli.

November 7, 1913. Patient, Walter. 2:30 p. m. Culture taken from both tonsils.

Smear.—Great majority are diplococci (catarrhalis?) of different size and staining qualities. Then there are some chains of long, stout bacilli with polar bodies.

November 9, 1913, 9:00 a. m. *First colonies.*—Culture was in ice box nights, from the seventh to the ninth. Colonies came on very slowly. They are all diplococci of different size and staining qualities, of the type we designate as the micrococcus catarrhalis. A great number of them are arranged in chains. This arrangement seemed to be largely an artificial one, but there were undoubtedly a few streptococci. A number of these colonies were transplanted to another tube of blood agar for further examination.

November 10, 1913, 8:00 a. m. *Transplanted culture.*—The culture was left to grow in the incubator for twenty-four hours, and the colonies examined. There are again apparently small diplococci in the majority, but there are more streptococci than above. Long chains of more than five to seven individuals do not occur. One of these colonies was again transplanted to the bottom of the same tube to be examined later.

November 10, 1913, 9:00 a. m.—*Twenty-four hour culture.*—Micro-diplococci of different staining qualities. In a thick sample, a number of them arranged in short chains up to ten individuals. A thinly spread sample does not show so much chain arrangement, but gives a better evidence of some true streptococci. No bacilli.

November 11, 1913, 5:00 p. m.—*Transplanted culture.*—Nearly all micro-diplococci, few of them arranged in short chains. They are Gram positive. (vide table pages 305 and 306.)

The Small Epidemic.

SMEAR.	FIRST COLONIES.	18-24 HOUR.	TREATMENT.	SUBSEQUENT EXAMINATION.
Case I.				
Diplococci and small bacilli.	Long chained streptococci.	Mostly bacilli, few streptococci and staphylococci.	Twelve millions S. pyogenes.	3-4 weeks after throat became normal first colonies show only diplococci.
Case II.				
Diplococci and an occasional short chained streptococcus.	Long chained streptococci.	Diplococci and staphylococci.	Fourteen millions S. pyogenes.	First colonies show only diplococci.
Case III.				
Mostly short chained streptococci. Few diplococci.	Long chained streptococci.	Long chained streptococci.	Fourteen millions S. pyogenes.	First colonies show only diplococci.
Case IV.				
Diplococci and bacilli. Spirochaetes refringens and dentium.	Long chained streptococci.	Diplococci and bacilli.	Fifteen millions S. pyogenes. 5 day interval. 20 million S. pyogenes. Arthritic involvement.	First colonies show only streptococci.
Case V.				
Diplococci and bacilli. Spirochaetes refringes and dentium.	Long chained streptococci.	Diplococci and bacilli.	Ten millions S. pyogenes.	First colonies show only diplococci.
Case VI.				
Diplococci and bacilli. Spirochaetes refringens and dentium.	Long chained streptococci.	Diplococci and bacilli.	Five millions S. pyogenes.	First colonies show only diplococci.
Case VII.				
Diplococci and bacilli. Spirochaetes dentium and refringens.	Long chained streptococci.	Diplocci and bacilli.	No vaccine.	First colonies show only diplococci.

SMEAR.	FIRST COLONIES.	18-24 HOURS.	TREATMENT.	SUBSEQUENT EXAMINATION.
Case VIII.				
Pure streptococci.	Long chained streptococci.	Pure streptococci.	No vaccine.	Short chain streptococci after three weeks.
Case IX.				
Diplococci and few bacilli.	Long chained streptococci.	Mostly bacilli, few diplococci.	No vaccine.	First colonies show only diplococci.
Case X.				
Diplococci and few bacilli.	Long chained streptococci.	Mostly bacilli, few diplococci.	No vaccine.	Short chain streptococci and diplococci.

THE LARGE EPIDEMIC.

SMEAR.	FIRST COLONIES.	18-24 HOURS.	TREATMENT.	SUBSEQUENT EXAMINATION.
Case I.				
Diplococci and short bacilli, long bacilli and Sp. refringens.	Long chained streptococci.	Many bacilli and staphylococci and few streptococci.	Seven millions S. pyogenes. Result positive.	First colonies show only diplococci.
Case VIII.				
Diplococci and M. catarrhalis.	Long chained streptococci.	Streptococci, diplococci and staphylococci.	Ten millions S. pyogenes. Results positive.	First colonies show only diplococci.
Case IX.				
Pure streptococci.	Long chained streptococci.	Mostly pure streptococci, few diplococci.	Ten millions S. pyogenes. 3 day interval. 5 millions S. pyogenes. Results positive.	First colonies show only diplococci.
Case XVIII.				
Mostly diplococci, few streptococci and bacilli.	Diplococci.	Same as smear.	Ten millions S. pyogenes. Results positive.	First colonies show only diplococci.
Case XXIII.				
Diphtheroid bacilli and streptococci.	Long chained streptococci.	mostly diphtheroid bacilli.	Ten millions S. pyogenes. Results positive.	First colonies show only diplococci.
Case XLVII.				
Mostly cuneiform shaped bacilli. Few streptococci. M. catarrhalis.	Bacilli.	Same as smear.	Fifteen millions S. pyogenes. Results negative.	First colonies show only diplococci.

The Large Epidemic.

This group of cases divides itself bacteriologically into six types, represented by the cases detailed above. Twenty-three other cases have practically the same findings as Case I; eight others showed the same findings as Case VIII; eight others, same as Case IX; four the same as Case XIX; thirteen as Case XXIII, and three as Case XLVII.

Summary.

1. Owing to the increasing evidence of the etiological relationship of the streptococcus family, and rheumatism, certain of the arthritides, anemias, ear and brain conditions, septicemia, and less frequently chorea, orchitis, appendicitis, gastritis, nephritis, et al., it would seem of great benefit if an early diagnosis could be made of the simpler conditions which give rise to the foregoing.

2. This epidemic of septic sore throat occurring in Ann Arbor two years ago gave rise to a method which at least was successful in an early diagnosis of the affected cases by an examination of the first colonies that appeared on a suitable medium. In this connection it is hoped that this method will apply to ordinary sore throat, and at least in those which are due to the streptococcus, give an early indication of its presence in a virulent condition. I am glad to state that for some time past we have applied this method to about forty of these cases and the results have so far corroborated our earlier studies. This series of cases, with the additional ones that are accumulating, will be reported in the near future if there is justification for such a report.

3. As evidence in favor of the efficiency of this method, we have (1) the results of the specific vaccine with controlled cases in which no vaccine was used, and (2) the return, bacteriologically, to normal of the affected throat.

4. It would seem that there is a relationship between the virulence of the organism and the length of the chains, although such relation is not proportionate. The case of Jewell and many others referred to is strong evidence that environmental conditions are not the sole factor in determining the length of the chain.

I am indebted to Dr. Dean W. Myers for his hearty co-operation, as expressed by the lending of his clinical patients for the pursuance of these studies, and, again, to Mr. William Voight for painstaking, careful technical services.

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Physiological treatment of catarrhal deafness. Geyser (*N. Y. Med. Jour.*, July, 11) cleanses the nose, nebulizes it with an oily solution of iodine if atrophic, or of acetozone if hypertrophy predominates, then for atrophy applies the stimulating vacuum high frequency tube, but for hypertrophy uses "the heating, tissue contracting effect of the diathermic current. If the electrodes will not enter he electrolyses the nasal fossae, between cartilage and mucous membrane. Hot pneumatic massage is applied through the external auditory canal and then (that passage having been cleansed from all fats) a galvanic current, gradually up to half a milliampere is passed from the nape of the neck through the drum head, the protected canal being filled with a warm clean alkaline solution. As tolerance is established the current is increased to one or even two milliamperes for at least fifteen minutes. This lasts three to six weeks. The Eustachian tube is made patulous with quarter to half a for five minutes.

THE CAUSE OF THE FAILURE OF SOME RHINOLOGICAL OPERATIONS

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THE title of this paper would of necessity suggest that there are a few operations on the nose and throat which are not the success that the operator and patients hope they will be. These cases are generally those which have been associated with what has been termed "habitual mouth breathing," the cause of the mouth breathing being the adenoids on lymphoid tissue located in the naso-pharynx.

If we will study the history of such a case we find that the patient has been a sufferer from "mouth breathing" for some time. The longer the mouth breathing has existed, the less chance there is for a favorable recovery upon the removal of the adenoids; I mean the less liable are we to produce a normal breather by the removal of the adenoids. There is little doubt that the adenoids were the primary cause of mouth breathing, but owing to the development of the other complications the removal of the adenoid will not cause nasal breathing.

If we will examine closely the various disturbances which are associated with mouth breathing we will see why the removal of the lymphoid tissue will not cure the "habit." In order for a patient to breathe through the nose it is necessary for the lips to be closed, and in a great many patients it is impossible for them to close the lips. In normal breathing there are several factors which play an important part in the development of the face, and these factors are absent when the patient is a mouth breather.

Given a normal child at the age of six we find the mouth is closed and the child breathes through the nose, for that is the normal state of affairs. No child begins mouth breathing because he wishes to, and the habit of mouth breathing is always the result of something. In the beginning that something is usually "adenoids," but later in life they may atrophy or be removed and mouth breathing will still persist. It then is to be concluded that mouth breathing produces some deform-

ity or disturbance which makes nasal breathing impossible, even if there is no nasal obstruction in after years. It is this deformity occurring as a result of mouth breathing that causes so many disappointments when operations are performed. I do not claim that the removal of the adenoid will never produce the nasal breathing, but I do claim that in a great many cases there are deformities present that will prevent nasal breathing even if the nasal tract is clean.

You may ask, what are those deformities? As these deformities are the result of several disturbed factors or forces, it is best to consider the development of the normal nasal tract.

In the consideration of the development of the nasal cavity we cannot ignore the oral cavity. In fact, the nasal cavity is only the "upper story" of the oral cavity. At one time in life the stomodium was a common cavity out of which has been formed the nasal and oral cavities. Therefore, it is plain to see that anything which will disturb the function of one of those cavities will also disturb the other. As the development of the nasal cavity proceeds from the stomodium we find that a process grows toward the median line from the maxillary bud, which process becomes the palatal process of the superior maxillary and palate bones. The palatal process of the superior maxillary bone forms the greater portion of the bony floor of the nose and roof of the mouth. Abnormal developments or lack of developments of the floor of the nose or roof of the mouth will lead to conditions which will make nasal breathing impossible.

Growing down from the roof of the nose is another structure which is also important and which divides the nasal cavity into the right and left portion. This nasal septum extends downward until it meets the floor of the nose which was developed from the process before mentioned, which came from the maxillary bones. The nasal septum is of older origin than the floor of the nose, as we find it in animals, which do not have a complete bony floor of the nose. We then have the nasal cavity separated into a right and left side which are supposed to be of equal size, and which in mouth breathers, and in fact in some who are not mouth breathers, are hardly ever equal. This lack of harmony in the development is generally the result of mouth breathing or injury, and when it is the result of mouth breathing it results in a condition which will continue to make the patient a mouth breather.

It often seems to me as if the cause and effect were so closely blended that it is no wonder that some men have said that mouth breathing causes adenoids. However, the causative effects are as follows: Adenoids produce mouth breathing; the mouth breathing produces deformities and abnormal developments, along with lack of development, that make nasal breathing impossible even if the adenoid is removed in later years.

These deformities and lack of development are the reasons, or causes, of so many failures that are seen in the practice of rhinology. When I say failures, I mean that operations are performed on the nose and the patient should breathe through the nose, but they do not so breathe because of the facial deformities or abnormal development.

When a patient is a normal breather the lips are closed, the tongue is held in the roof of the mouth and fills the whole of the oral cavity. The mandible is held in place by atmospheric pressure and the muscles which are attached from the hyoid bone to the mandible are held up by atmospheric pressure. With each act of respiration there is a pressure exerted on the walls of the nasal cavity which tends to cause the sinuses to develop. The position of the tongue in the roof of the mouth and the mandible held upward by atmospheric pressure cause the floor of the nose or the roof of the mouth to develop downward, hence the flat broad arch which is seen in normal breathers as compared to the high narrow arch in mouth breathers.

Having briefly considered the relation of the parts in normal breathing we will notice the changes which occur in mouth breathing. First, the lips are apart and the tongue is in the floor of the mouth. With this act the atmospheric pressure which held the mandible in position is missing and the mandible drops downward. The muscles which are attached to the body of the mandible and the hyoid bone sag downward, and there is a downward and backward pressure on the mandible. As a result of this the mandible stops developing as rapidly as it should and in a short time we have the underdeveloped mandible—receding chin (which is an under-developed chin), that is always associated with these cases. The lack of forward growth of the mandible has often been mistaken for a posterior displacement of the mandible, which I have never seen. The mandible is not displaced posteriorly, but the body has never developed forward as it should. If this con-

dition occurs before the eruption of the first permanent molars, it is very liable that the mouth will be open far enough to allow the cusps to pass each other and as a result of this we will find the lower dental arch posterior to the upper arch the width of one cusp. If the mouth breathing occurs after the eruption of the permanent molars we will often find the antero-posterior molar relation normal.

This does not mean, however, that we will find normal dental arches and a normally developed mandible and maxilla. In fact, it is almost impossible to have a normal development of the bones of the face if the patient is a mouth breather. As the lips are held apart there is no restraining pressure on the upper anterior teeth and they protrude, giving the prominent incisors which are seen in a great many cases. Also, the lower lip falls against the lower anterior teeth, which is not the natural position of the lower lip. In normal breathing the lower lip is in contact with the upper teeth, which also assists the upper lip in holding the upper anterior teeth lingually against the lower anterior teeth. This lack of pressure then permits the upper anterior teeth to protrude if any force is brought to bear on them; and the force is supplied by the abnormal position of the lower lip. If you will observe one of these patients you will see that the edge of the upper incisors rests against the lower lip. The irritation of the teeth against the lip causes the lip to thicken, and the thickened lip in turn causes the upper incisors to protrude farther. As a result of the protruding incisors above, the proximal contact of the upper teeth is disturbed, with the result that the arch in the region of the canines does not widen and develop as it should. Some have claimed that the upper arch narrowed in the canine region, which may occur sometimes, but even a lack of development will result in the deformity which will prevent the canines from assuming their normal position. The upper arch in the canine and molar regions fails to develop, and as a result of this failure of development we find the narrow arches which are characteristic of these cases. Associated with the narrow arch we have the high roof of the mouth, which means that the nasal cavity is too short from above-downward.

The high narrow arch is the result of the lack of certain forces which have been disturbed by the mouth breathing. As soon as the patient begins to breathe through the mouth the tongue is removed

from the upper arch and there is no suction of the tongue upon the roof of the mouth. The natural position of the tongue associated with the atmospheric pressure stimulated a downward growth of the roof of the mouth. There is also a growth buccally. In mouth breathing both of these forces are absent and as a result we find the high narrow arch. The roof of the mouth is not forced upward, but it never grows downward. As a result of this failure of the downward growth of the roof of the mouth, the nasal cavity is small from above downward. This lessened height does not give room enough for the nasal septum, which continues to grow downward, and meeting with resistance from the below is deflected from above downward.

Therefore, as a result of the mouth breathing, we find the upper dental arch narrow and the anterior teeth protruding, the roof of the mouth high, the mandible under-developed, receding chin, short upper lip, thickened lower lip, abnormal muscular pressure, and in a great many cases a deflected septum. The rhinologist removed the adenoids and the other conditions remain, excepting that he may operate on the septum or remove a turbinated bone, but the breathing of the patient is seldom normal. The reasons for the failure to obtain normal breathing is because all of the deformities which I have mentioned remain. With the protruding upper teeth the patient can not close the lips. The upper lip also being short in the majority of cases makes the closure of the lips more difficult and often impossible. Without closure of the lips nasal breathing is impossible. Also, with the high narrow arch the nasal cavity is too small; there is not sufficient space and development to allow enough air to pass through the cavity. This is another reason why the patient continues to be a mouth breather.

The cases must be treated by orthodontic methods which will widen the upper arch and reduce the high palate. When this is done it will be seen that the nasal cavity has increased in width and the septum has straightened. The removal of nasal obstructions alone will not make these patients normal breathers if the mouth breathing has existed long enough to produce the deformities mentioned. However, with proper orthodontic treatment normal development of the parts is produced, the deformities disappear and the patient becomes a normal breather.

FUNCTIONAL BLINDNESS

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IT IS not the desire of the writer to call attention simply to those extreme cases of functional disturbance which figure in the newspapers under the headline "Dr. X. restores sight to a boy who was stricken blind on his way to school," etc., but also to a class of cases which suffer from a disturbance of color values without any material loss of form sense, which can express their symptoms only in an indefinite way such as "Light disturbs me;" "Things look a little dull;" "I have a hazy spot before my vision," etc.

Now, as the white light is composed of a certain proportion of blue, red and green, anything which effects our appreciation of the relative values of these elemental colors must have its effect upon the luminosity of the light, whether it be white or colored. That the perception of color is not purely a physiological process is indicated by the fact that the ocular centers lose their sensitiveness to the stimulation of light from the actinic end of the spectrum more easily than from the colorific end. Although the conclusion of Helmholtz, Young, Parinaud and others indicate that the production of color sensations depends upon the presence in the retina of photo-chemical substances, it does not seem to me that the visual color phenomena of migrain, neurasthenia, hysteria, brain fatigue, etc., bear out this theory. I am not competent to prove that the production of the color sensation resides in the cortex of the brain and not in the presence of the photochemical substance in the retina, but I desire to submit for your consideration the proposition that if the former be true, is not the color aura of migrain or the non-concentric contraction of the color field of hysteria another means of showing the central origin?

Although concentric contraction of the field of vision, as occurs in atrophy of the optic nerve, must be considered as an organic eye fault, the inversion of the color field as found in hysteria, neurasthenia, etc., is a neurosis. Observation of the perimetry charts of many cases

suffering from anomalous eye symptoms have shown me that the inversion of the color field is not an uncommon condition in people who have a low nervous reserve or who have been under great mental or nervous strain. In this class may be included women during the menstrual period, at the menopause and during pregnancy, adults with pronounced spasm of the accommodation, etc.

A knowledge of this neurosis will give the oculist a firm foundation upon which to base his diagnosis and prognosis and thus relieve his own mind and allow him to assure his patient that, although the visual symptoms are legitimate, they are not of serious import. A long step is taken toward cure when the anxiety of the patient is relieved. Nerve tonics, high frequency current and general hygienic measures are indicated rather than simply the correction of some minute refraction error or distinctly eye remedies.

Following are a few cases with their histories.

Case 1. Mrs. S., aged 50 years. Complains of "failing vision," for which she has been to many oculists for relief. Examination shows a low degree of compound hypeopic astigmia. Vision with glass normal. Fundus normal.

Perimetry test shows marked contraction of color fields, especially f[illegible], form sense normal.

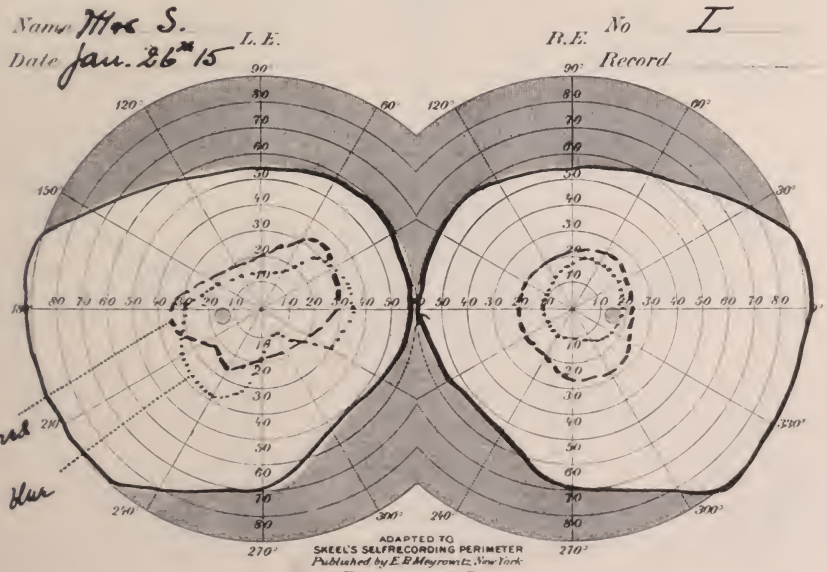


Diagram I.

Comparison of the perimetry chart of a case of atrophy of the optic nerve with her own chart gave great weight to my argument against her having any serious organic lesion of the nerve.

Treatment consisted in giving Ferrum pic. internally, and advising a vacation.

Case I. Mrs. S. Both red and blue fields are much contracted, but the blue more markedly, while the field for form is normal. The disturbances of color values caused a feeling that vision was failing, even though definition was perfect. Compare these charts with the chart of Case II, left eye, which is normal.

Case 2. Mr. V., aged 45. Wearing d.v. ou.+.75 n.v.+1.50. While traveling in the south suddenly had decrease in right vision and at once came to me, January 20, 1913. Examination of the fundus showed no fault, but vision was 15/20 d. Perimetry test showed marked contraction of the field for blue in the right eye, while the left was normal. I advised that he exercise more and restrict himself in the use of food and tobacco. He was given Fer. pic. 3x to take internally.

Improvement began in a few days and on February 10th vision and color field were normal. One source of nerve drain in this case was the poorly corrected presbyopia.

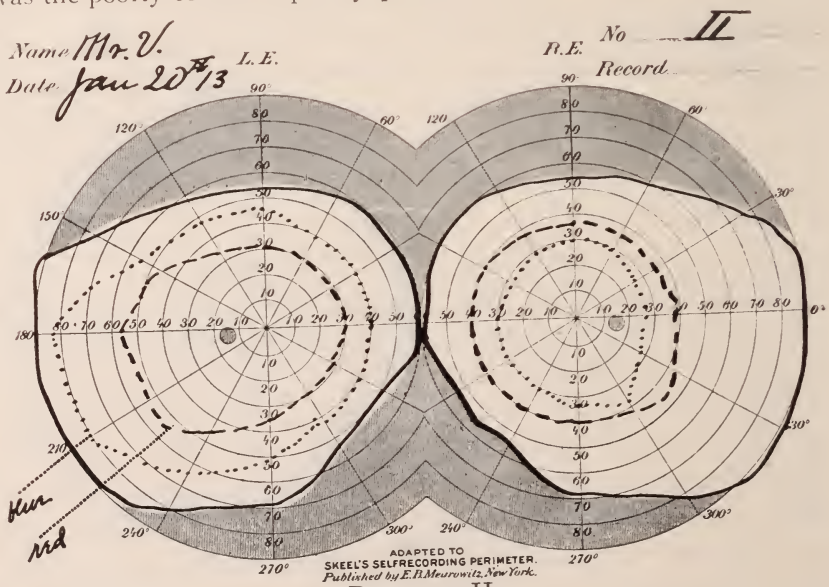


Diagram II.

Case II. Mr. V. Note the very marked contraction of the right blue field, while the left fields are normal. There was no noticeable change in the retinal vessels.

Case 3. Mrs. W., aged 26. Wearing full correction of compound hyperopic astigmia, which gives 15/15. Fundus normal. History of good health till three years ago; since then attacks of temporary blindness every few weeks, numbness of arms and legs and other anomalous sensations. Her physician reports no internal fault, after careful examination. Several perimetry tests show great variation in the color fields, but always a predominating contraction for blue.

Ignatia always gave temporary relief to all of her troubles. The important factor in this case was the removal of the great fear that the eyes were seriously involved. With the whole thought focussed upon the eyes advice as to general care of the nervous system was unheeded.

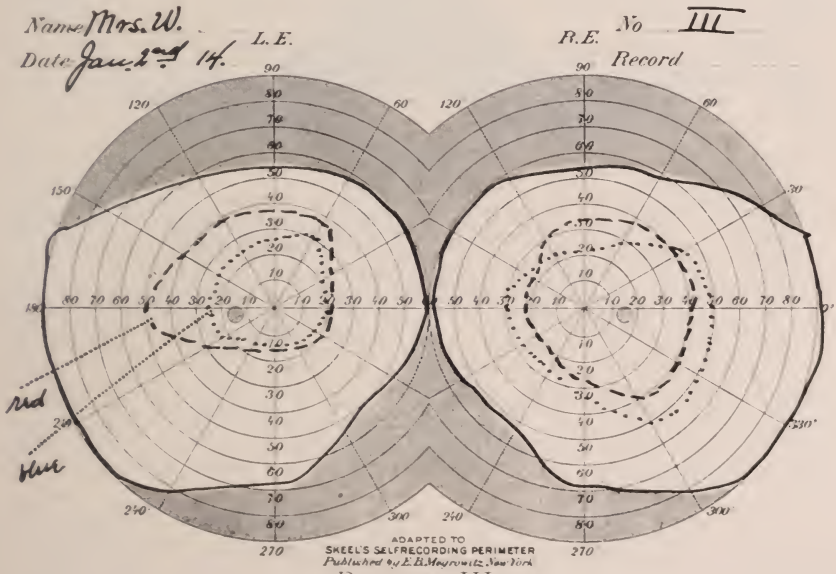


DIAGRAM III.

Case III. Mrs. W. This field was not taken at the time of a "blind attack," but when the vision was disturbed. The charts at different sittings varied much, at times being normal.

Case 4. Mr. S., aged 27. Examination showed 1.75 of mixed astigmia, of which a 50% correction was worn. Exophoria in acc. 9° Fusion very low.

History of a nervous breakdown three years previous, and since then, even though the general health was good, had been unable to use the eyes for close work. Perimetry test showed very marked contraction of color field—blue.

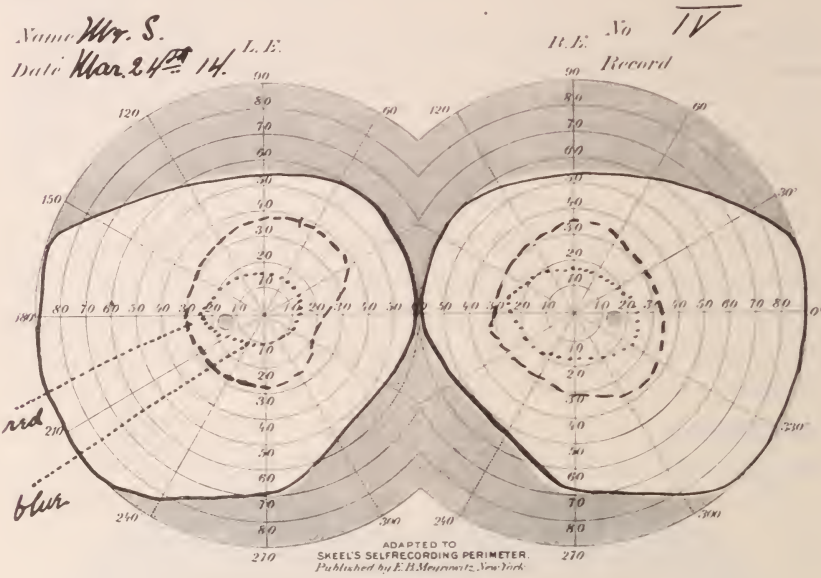


Diagram IV.

Case IV. Mr. S. For several months this inversion of the color fields was present, but never any contraction of the fields for form.

Treatment consisted in a full correction of the astigmia and careful education of the fusion sense. This fusion exercise was a very trying task because of the low nervous reserve in the ocular centers. Both patient and physician realized that the eye symptoms were due as much to the central nervous system as to the error in the eyes, and planned accordingly.

Lately the perimeter shows normal color field, and the eyes can be used for as much as six hours in very close work. This case has been cited to show how great an aid is the knowledge of a marked functional disturbance in the ocular centers in driving home the advice as to right living. This patient felt that there was something radically wrong with the eyes which could be righted only by proper glasses. He was shown the pictures of his color fields changing with his good and bad days and finally was convinced that I was right about the eyes not being the only malefactors.

SKIAGRAPHIC DIAGNOSIS OF NASAL ACCESSORY SINUSES

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IN comparing operative with diagnostic findings one is impressed with the little evidence of real value which skiagraphy of the accessory nasal sinuses has added to the study of these areas. In the past two years numerous workers have outlined varying techniques for radiographing the sinuses, any one of which is capable of developing all the diagnostic possibilities, so far as this method alone is concerned. I believe the present consensus of opinion accords to these skiagraphic findings their true place; namely, that of accessory to the many well-known and reliable clinical methods. Alone they are of secondary value.

A routine x-ray examination of every sinus case and every case with possibilities of a sinus involvement which enters the service of any large clinic, and the careful checking of these examinations with the operative findings subsequently, is the only method of determining the relative value of this method of diagnosis. We have endeavored to make such a study from the material afforded us in the O. R. and L. Clinic of the University Homoeopathic Hospital.

We have tried to develop a technique which would serve best as a routine procedure in our laboratory and which we will outline in order that our position relative to the value of these findings may be better understood.

First, all maxillary, ethmoid and frontal sinuses were exposed in the antero-posterior position. The sphenoid area caused our greatest difficulty, but we finally exposed with the plate under the jaw and the ray directed from the vertex, thus getting the area in a plane roughly perpendicular to the plane of exposure and not superimposing. Mastoids were taken from a modified profile position, our aim being to superimpose the external and internal auditory openings, and also eliminate one side from the plate. In all instances a medium tube

passing from 20 to 25 ma. for from ten to fifteen seconds was used. None of the plates was screened and compression diaphrams used only on antero-posterior exposures.

In outlining the maxillary sinus great difficulty is encountered because of the shadow superimposed by the petrous portion of the temporal bone. This is obviated by directing the ray from the vertex and compressing the chin to the plate with the nose hardly touching. In these exposures the temporal bone shadow is at the lower border of the antrum. However, great care must be exercised in order to keep the sagittal plane of the head exactly perpendicular to the plane of the table. The patient is lying face down on the table, both arms along the sides next the body. The operator stands at the head at



Positions Used in all Antero-posterior Exposures.

the end of the table, adjusting the position. This position gives an equally good outline to the maxillary, ethmoid and frontal sinuses with a slight superimposing of the latter two. Unlike other methods, the foramen rotundum and the sphenoidal fissure will not be in the plane of this exposure. It has the advantage, however, of the least possible superimposing and no dense shadows cross any of the areas. In addition, we are directing our ray across the most shallow diameters of each cavity in the vast majority of cases. As I have said, the

frontal and ethmoid areas slightly superimpose, but any position will not entirely eliminate this. The orbital projections of the frontal are readily outlined and the hazing of the lower frontal area by the upper ethmoids is practically negligible so far as diagnosis is concerned.



Antero-posterior View of Head Showing Shadows of Petrous Portion of Temporal at Lower Border of Antrum.

The sphenoidal area presents a different problem. Any exposure from any position superimposes shadows of equal density to the sphenoid and interpretations are of little value. Numerous workers have employed methods invólving lateral exposures or positions between a lateral and an antero-posterior. The lateral or profile views involve a complete superimposing of the two halves of the sphenoid itself. Modified lateral, or positions between a lateral and antero-posterior involves some slight superimposing, but places the areas to be studied at varying distances from the place, with a consequent distortion of one or the other. An exposure from the vertex through the exact sagittal plane with plate below the inferior maxilla has given us the most consistent findings, but not entirely eliminating shadows of equal density from overlying.



Showing Blurring of Sinus Outlines in a Case of Pan-Sinusitis of the Right Side.

A modified lateral view is very satisfactory for mastoid study. Briefly the position is as follows: Patient face down as in the other positions, face turned away from side involved and resting on a small inclined plane with a rise of about two inches to the foot. This brings the sagittal plane of the head in the same plane as the surface of the incline. Now the head is slightly tilted, bringing the face slightly closer to the plate than the occiput. An exposure in this position will superimpose the external and internal auditory openings and excludes a considerable number of denser shadows. Practically only one mastoid has been in the path of the ray.

The complete lateral or profile view is used by us only for sella turcica outlines, as it gives the best view of the clinoid processes.

The above technique has been followed as routine in our laboratory, and after trying a variety of positions we have settled on the above as being the most satisfactory from our standpoint.



Lateral View of Mastoids Showing Superimposed Shadows Which Interfere With Interpretation.

Plate interpretations and studies from the normal head are indispensable before attempts at diagnosis of sinus lesions are begun. The variations within normal limits in the size and position of the cavities are sufficiently numerous to require at least a realization of them. A fact frequently lost sight of is that skiagraphs are simply projections of shadows varying in density, and are capable of interpretation only in that light. This requires special study, and in our laboratory interpretations are made in the absence of any clinical history in order to give us some basis for judging this method as an isolated procedure.

Experimental studies on the skull have demonstrated one fact, the acceptance of which is necessary in making a diagnosis. Liquids of varying densities from water to thick pus were artificially introduced into the sinuses of a skull carefully denuded of all soft parts. By a somewhat similar procedure the lining of the cavities was coated with gelatine in another series of experiments, to simulate changes in the epithelial lining in diseased areas. The result showed clouding in the cavities when the more dense liquids were used and also when the thicker gelatine coatings were used. However, in the majority

of the experiments in which less dense liquids were used and thinner coatings employed no change in the density of the shadows on the affected side was observed. One condition was found common to all experiments, varying but little with the different densities. That was *the fading of the outline of the sinus on the injected side.* This same finding is made in the affected sinus in the living, but to a more marked extent. The above statements are elementary to any who have studied these cases, but, however, they are frequently lost sight of in the desire for more complete diagnosis.



Modified Lateral View Showing Mastoid Cells Without Superimposing Any Shadows of Corresponding Densities.

First, as to shadows cast by sinus contents. Only the more dense liquids, so called mucoceles, polypi or neoplastic growths of fibrous type, are capable of shadow formation; that is, of diagnostic import. Epithelial thickenings marked in extent are capable of causing the same appearance. No differential findings are possible in the above conditions. One sees then that no acute conditions are included. Of course, these are exceptions; occasionally one of the mixed infections forms a dense liquid which is shadow producing. It has been our experience that acute sinus inflammations cause little, if any, change in density. Furthermore, any changes noted in shadow cast by sinus contents may be duplicated by the normal sinus. Why, we are unable to say: In our work we have endeavored by the use of a routine technique to eliminate the more common sources of error and the presence of these shadows in so many clinically sound patients has been supportive of the above statement.

Second, as to sinus outline. We have come now to the most tangible evidence of pathological sinus change. Any of the conditions common to these areas, whether inflammatory or neoplastic, is capable of causing a change in outline which is demonstrable in the skiagraph according to the degree of the condition. This blurring or hazing of outline in the affected sinus is possible of interpretation only as a pathological change of some type. Nothing differential is possible in our experience. I want to emphasize again the point that our interpretations were made without the assistance of any clinical findings. This was done at the request of Professor Myers.

There are three things of possible value that can be determined by the ray: (1) the location of, (2) the size of, and (3) the presence or absence of the various sinuses. These are of inestimable value from the operative standpoint, frequently determining for or against operative procedure. These three last named findings, and in addition to a lesser degree, the blurring or hazing of sinus outline, constitute the positive diagnostic interpretations possible from a skiagraph of any of the sinuses.

Our studies have covered quite a variety of conditions and we feel that the valuation we have placed on this method as a diagnostic aid is, if anything, too high. Most observers have made their interpretations in the light of previous clinical examinations and we feel are more or less influenced by these findings.

In conclusion:

Skiagraphy of accessory nasal sinuses as a diagnostic procedure has been overestimated.

A routine technique is essential to correct interpretations.

Interpretations are entirely comparative.

Sinus shadows in disease are simulated in normal.

Blurring of outline the only positive sign.

Skiagraph positive as to anatomy of sinus.

Studies and interpretations in absence of clinical findings necessary in determining exact value of this method.

A FEW PLAIN TRUTHS

PHILIP RICE, M. D.,
San Francisco, Cal.

ONCE upon a time"—as many stories begin—I was very much given to criticizing and ill-treating my brother oculist and aurist because, as I believed, he very grossly offended against our Materia Medica and the principles we profess to believe to be superior to all others in the treatment of the sick. There were times when, had I met him face to face, it would have required considerable self-restraint to have prevented my laying hands upon him. The feeling of indignity that on occasions would possess me was almost uncontrollable.

If I now say that all this is a thing of the past, I wonder what those who have been the victims of this wrath will think. Will they think that I "have fallen from grace," or just simply come to my senses? Well, through experience I have come to see at least some of the reasons why men in our specialty come to employ the methods many and possibly most of us do. As the years have gone by since I first entered the ranks of the specialist I have observed and experienced a number of very striking things, and they have had much to do with this modifying of my attitude.

In the first place, I have become thoroughly convinced that the eye and ear men are if anything more loyal to our cause, more interested in the reconstruction of our Materia Medica, and more eager to begin the task of a reconstruction than any other body of men in our school. In the second place, I have, through experience, come to realize that nine out of every ten in general practice are not willing that the oculist and aurist apply his knowledge of Materia Medica on any of their patients. Such knowledge as he may have he is sometimes respectfully and sometimes otherwise, but always requested to set aside. He is expected to give satisfaction to every patient, of course, but he is never to administer any remedies whose action is homoeopathic, because this means a cure of other conditions besides those related to the eye or the ear. How well this could be illustrated from

our experience. The result of all this is that many oculists and aurists become dabblers and routinists from the pressure applied by the general practitioner. In the third place, many patients are skeptical about the efficacy of an internal remedy for their "catarrh," and not infrequently resentful when one is prescribed because their family physician recommended them to come for local treatment, and again resentful when an oculist inquires concerning the menstrual function, for example, feeling that this does not concern him any more than it does the dentist or the manicurist. And in the fourth place, I have been led to change my mind and become more tranquil in disposition, because the further I get away from the time I was in general practice the more difficult, yes, impossible, I find the present arrangement of the Materia Medica to be. There are possibly some other reasons for this change, but of minor importance. These that I specially mention might be greatly enlarged upon, but it hardly seems necessary. Everyone who has had any experience at all will be able to read a great deal between the lines, and on the whole I think will admit that they are fairly reasonable reasons.

Of course all these things did not come to me at once, hence my readjustment was also gradual. First one thing was driven home, then another, and another, until the entire situation took on a different aspect. I used to say to myself, "Well, now that this is so and so, what are you going to do about it?"

And this is just the question I want to ask now, What are you going to do about it? And by "it" I mean the present muddled and unsatisfactory therapeutic situation, for muddled and unsatisfactory it surely is. A worse situation it would be difficult to conceive of. A few—very few—speak of the "science of medicine" with something of a show of pride; the rest of us clearly indicate in our speech and our manner that the less said about it the better. We know it is not a science, and deep inside have a feeling that it is unwise even to hazard a guess when it will be a science; and this we regret sincerely.

But however regrettable this fact may be, it is by no means as discouraging and lamentable as is the fact that so few are willing to make the necessary sacrifice to develop and establish the principles of science. How many are there who are willing to endure hardship, who are willing to be reduced to extreme poverty, and, more than

this, willing to carry along a family into the depths, willing to be driven from pillar to post, willing to have mind and soul harrassed and tortured in order that a great principle shall be born and made to live? How many real heroes are there among us today? How we all admire the giant intellect of Hahnemann! What insight and foresight; what learning! Yet when compared with the unconquerable soul, the uncompromising conscience, the indomnitable will, and the Spartan-like spirit of self-sacrifice of the man, the intellect, great as it was, seems a mighty weak thing. These other qualities are really what made the man. He was by no means the only learned man in his time. Undoubtedly many could hold their own with him in any scientific discussion; but, lacking those other and implacable attributes of Hahnemann, they failed to achieve the great results he did. The world will never know how many great minds have gone down into oblivion and altogether because back of them there were no great characters.

When we compare ourselves with a Hahnemann, what pigmies we really are. And the pathetic thing about it all is that we seem quite willing to be pigmies. We complain about the Materia Medica being so difficult, the arrangement of the symptomatology so impossible, yet do nothing to improve it; at least do nothing really rational. We all talk about retesting our drugs, even demand that this be done in up-to-date laboratories, and under rigid test conditions. We demand that all the reactions be scientifically investigated; that every modern device and instrument be used in the work. But what, after all, do we accomplish with these things? Is it not true that with the microscope, the test-tube and all the rest of it we simply discover more symptoms to incorporate in the pathogenetic record and so make our present difficult task more difficult? Admitting that what we are able to discover with them is scientific data and adds to the sum of human knowledge, but does it follow from this that it can be made use of under any and all circumstances and by all persons? Of what use are the symptoms in the record of a drug observed with an ophthalmoscope to a man who knows no more about the use of the opthalmoscope than a Fiji Islander? Just so with much else that is turned out from the modern laboratory. For the men many miles away in a country village with nothing in the way of a laboratory, a very great deal of it is not only

useless but absolutely incomprehensible. Isn't it possible that we do all this sort of thing because it is the easiest thing and the most popular thing?

Conjointly with the unfolding of scientific data in the laboratory, then, there must be developed a method that will permit of a practical application of the same. This fact we have been very much inclined to overlook and this I think is the reason so much of what has been turned out has proved so useless. So I repeat, we do much complaining about our Materia Medica and little sensible work to improve it, though many of us have the very best of intentions. Many there are who have nothing but highest ideals in medicine; who would not stoop to do a thing that is low or debasing; who are ready to put in hard work. But many, unfortunately, are simply putting in time until another Hahnemann shall appear to pull us out of the hole. Others again have set the whole matter aside; have set aside every ideal except a dollar ideal and have developed skill in the art of palliation, in the art of cajolery, *i. e.*, the art of making people believe they are getting the right thing. What they have to offer is adorned with much showy tinsel and presented as the very latest word in science. They, at the slightest prospect of losing a few dollars, humble themselves before a patient, or before the person who has recommended a patient, to a point where every grain of manliness disappears from their souls.

Some years ago, and when quite young in the practice of medicine, I was given a full hour's fatherly advice by one of the shining lights in our school, a man who stands very high in the councils of our national organization. I do not recall all of it, of course, but here is a sample of it, and well do I recall the words: "Doctor, in order to be successful in the practice of medicine you must give as much thought to the matter of making people believe they are getting the right thing as to giving them the right thing." Several years later he expressed to me the greatest satisfaction at having made the practice of medicine a financial success. He smiled indulgently at the poor "boobs" who dream dreams about the principles of the science, and who to his mind make foolish martyrs of themselves. That there are many of this type in the medical profession let us hope is not the case. It is sad enough to think there is one. This man, of course, is the extreme, of which there always is at least one in every class.

But how many are there in our ranks imbued with the same sordid and venal ideas modified? Men who are less courageous; unwilling to go the same length with their rotten business, yet always ready to go as far as it is safe, and as far as their own more or less crooked standard of respectability suggests? And, on the other hand, how many are there who are not and never have been tainted with this spirit, but are always ready and willing to make the necessary sacrifice to raise our standard higher and establish our methods firmer?

No one will ever know "who is who" in these questions. We can only ask ourselves the question, "How do I stand?" And surely no one will doubt the outcome of our problems if we stand right. No one can possibly doubt the outcome if we put into our work the head and the heart Hahnemann did. The difficulties of our Materia Medica will then, I believe, prove to be no difficulties at all; and likewise the problems which are as stumbling blocks in our way, and which are leading so many of us astray, will take care of themselves.

The value of a mask over the surgeon's mouth. In order to demonstrate the value of a mask over the surgeon's mouth during operations, Candler carried out the following experiments with the bacillus prodigiosus: With ordinary speaking and quiet breathing no baccilli left the mouth. Coughing for two minutes caused only a few bacilli to be emitted, and these were controlled by a mask of eight layers of gauze, one of four layers being insufficient. Sneezing was shown to be a most dangerous source of infection from the mouth, one sneeze, and that an artificial one, producing 130 colonies of micro-organisms in a circle of 3½ inches diameter at a distance of eighteen inches. A mask of eight layers is not sufficient to keep back all organisms during prolonged sneezing although it reduces the infection considerably. There was, however, no growth on a plate exposed to one sneeze through such a mask.—*Tex. Med. Jour.,* September, 1914.

CONGLOBATE TUBERCLE OF THE CHOROID—A CASE

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Cleveland, O.

SOLITARY or conglomerate tubercle of the choroid is essentially a neoplasm and as such may well be designated a tuberculoma. It is a rare form of ocular tumor which, like glioma, occurs exclusively in the young. It differs widely in its microscopic appearance from miliary tuberculosis of the choroid, with which it is microscopically identical. The miliary form is not uncommon and presents the rather familiar picture of numerous isolated, whitish, rounded, softly outlined spots which never exceed one-third disc diameter and occur in any part of the fundus. They are non-vascular, produce no inflammatory disturbance and are usually a late accompaniment of general miliary tuberculosis. Conglomerate tubercle may be considered as comprising a large number of miliary tubercles closely herded together into a single mass—a pale, non-vascular, non-pigmented growth surrounded by numerous daughter deposits. These secondary nodules are generally accepted as characteristic of the tubercular nature of the neoplasm.

While the conglobate tubercle is readily distinguished from the miliary form of tubercular choroiditis, its differentiation from certain other lesions or neoplasms may offer some difficulties. Repeated examinations and numerous clinical and diagnostic tests may be required before the true character of a suspected lesion is definitely established. Oatman calls attention to reported cases of tuberculoma with extensive retinal detachment which are ophthalmoscopically indistinguishable from glioma. A positive local reaction to an injection of tuberculin would identify the lesion as tubercular. Transillumination may be of value in differential diagnosis, inasmuch as glioma is said to cast no shadow, while tuberculoma, which grows in intimate contact with the sclera, should be more or less obstructive to transmitted light.

The following account briefly describes a typical case of this rare form of ocular tuberculosis:

Dorothy S., age 20, a well-developed, well-nourished young woman, was referred to me by Dr. R. A. Scherz, May 18, 1914. The patient complained of failing vision in the right eye for several months past together with an ill-defined sensation of a hair in the eye. She had been annoyed during a similar period by a spasmodic choking and sensation of constriction and exhibited at the time of my examination a well marked thyroid hypertrophy for which she was under treatment.

Examination showed no external signs of ocular disease except a slight conjunctival hyperaemia, which the patient informed me had existed for several weeks and which, with the symptoms mentioned, was regularly aggravated at the menstrual period. Media clear, tension normal. Ophthalmoscopic search revealed a pale, rounded, slightly lobulated tumor above and involving the macula, devoid of blood vessels and slightly raised (perhaps 2 D) above the retinal level. (vide Fig. 1) Below this area were six to eight smaller "daughter" areas, almost chalk-white, surrounded by a zone of moderate congestion, and below these secondary nodules were a number of radial retinal folds resembling in form and arrangement an inverted aurora borealis, which I took to be a stretching of the retina by the growing neoplasm. Beyond a slight sclerosing of one vessel the remaining fundus was normal, and vision 20/40 with an absolute scotoma corresponding to the affected area. A correcting lens gave her slight improvement. A muscle test showed four degrees of exophoria, vertical muscles balanced. Urinalysis proved kidneys in good condition, Wasserman test negative. Patient gave no tubercular history, both parents coming of hardy stock. She showed no tubercular symptoms whatever, though giving a somewhat vague history of some involvement of the cervical glands in early childhood, Her health had always been excellent with the single exception of an attack of measles.

The patient was sent to the hospital for observation. June 1st she was given a test dose of 1 mg. of O. T. hypodermically. No febrile reaction was noted during the succeeding three days. At the

end of that time, however, the ophthalmoscope showed that two of the smaller daughter areas were disappearing. Having elicited a positive focal reaction, a diagnosis of conglobate tubercle of the choroid was made. Therapeutic doses of tuberculin were then instituted as follows:

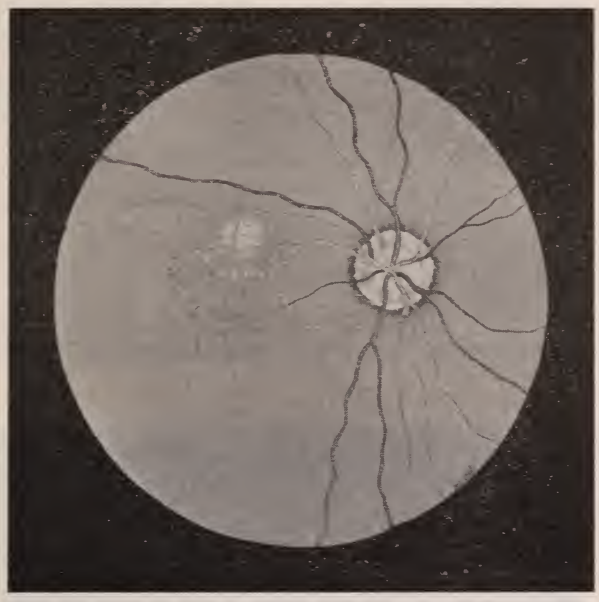


Fig. 1.

Tuberculoma Showing Daughter Areas and Radial Retinal Folds. (Author's Sketch.)

June	4th	Old Tuberculin	1/10 mg.
June	9th	"	2/10 "
June	13th	"	3/10 "
June	17th	"	4/10 "
June	20th	"	5/10 "
June	24th	"	6/10 "
June	30th	"	7/10 "
July	6th	"	8/10 "
July	14th	"	9/10 "
July	21st	"	1 "

July 26th	"	1	"
Aug. 5th	"	2	"
Aug. 15th	"	3	"
Aug. 26th	"	4	"
Sept. 4th	"	5	"
Sept. 15th	"	6	"
Sept. 29th	"	10	"

At this point medication was suspended for two months. On December 2nd the patient complained of a slight pain in the eye and was given another injection of 10 mg., with prompt relief.

The patient showed a gradual and continuous improvement in vision from the time treatment was instituted. At the present writing with correcting lens she has slightly less than 20/20 vision, with scotoma in the destroyed fundus area. All of the smaller daughter areas have disappeared, while the parent tuberculoma has shrunken in all

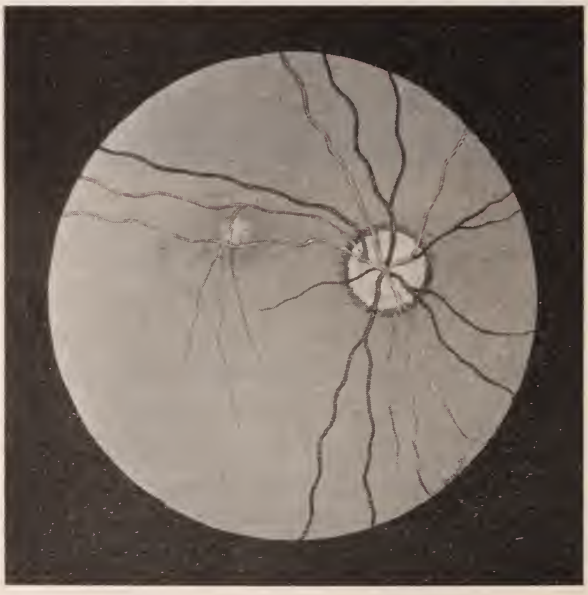


Fig. 2.

Pigmented Cicatrix of Healed Tuberculoma. Note Disappearance of Daughter Area After Four Months' Treatment. (Author's Sketch.)

its dimensions. A slight concavity has appeared near its center, while the peripheral healed area appears pigmented, in color a dirty grey. (See Fig. 2.) It will be noted from the above that while the tubercle itself was devoid of all pigment, the resulting scar was pigmented. These facts can be easily explained when we bear in mind that a tubercle destroys, absorbs and replaces the tissues in which it grows, including in the case of the choroid and retina the pigment forming cells. In the course of healing, however, the pigment entering into the formation of the cicatrix is supplied by the surrounding epithelial cells as a part of the process of repair. The subjective symptoms disappeared as the treatment progressed and a simultaneous improvement of the thyroid enlargement was noted until today no vestige of the same remains. This was significant in view of the fact that the goitre had resisted all previous therapeutic measures.

822-4 Rose Building.

Shot made everything appear green to him. A soldier in a recent battle was shot in the forehead, the bullet passing through his brain and out at the back of his head, but without even stunning him. He remarked, "Everything seems green all round me." When in the hospital tent he still saw everything green, but otherwise made no complaint. This case, says the editor of *Nature*, appears to favor the cerebral theory of color vision of Dr. Eldridge-Green, the shock to the brain having altered the discriminatory apparatus so that impulses caused by green rays had a preponderating influence.

BLINDNESS FROM BRAIN TUMOR—TWO CASES*

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ANYTHING interfering with the functions of the optic nerve, from its terminal expansion to its origin in the base of the brain, interferes with vision, ranging from partial to total blindness. This may result from very many widely different causes, local and constitutional or reflex.

It is of that form of blindness which is associated with tumor of the brain I wish to speak, presenting two recent cases.

Case 1. Mrs. C. W., age 37, in consultation with Dr. C. H. Eyerman, had the following history: Eight years before had severe la grippe attack, which left her with a marked vertigo. Under Dr. Eyerman's treatment she recovered from this. Two years ago had a child. Since then has had occasional cramps in legs and pains in left arm, and once in a while nausea. Has much headache.

Examination showed vision of right eye 15/40; left eye 15/70; no glass improved. In right eye there was temporal hemianopsia and in left eye the field of vision was reduced to a ring-shaped spot in the upper and outer field. There was slight convergence of the left eye, the external rectus of this eye being paralyzed. The pupils were dilated, with very faint reaction to light either direct or consensual. The tension was normal. Ophthalmoscope showed papillitis, with swollen disk of both eyes, with distinct protrusion, measuring about 2 mm. The watch (fifteen feet normal) was heard eighty-four inches from right ear, and not at all in left ear. Tuning fork was heard well when placed on head and before the right ear, but not in left ear. Knee and Romberg's reflex normal.

The diagnosis was choked disc, optic neuritis descendens from brain tumor.

Two months later the patient, still under Dr. Eyerman's care, was re-examined. The vision had gradually grown worse and the severe headache persisted. There was not the slightest appreciation of light.

*Read at the Missouri Institute Homoeopathy.

Vision entirely gone. Pupils stationary; no reaction. The diagnosis was same as before. Prognosis bad so far as the sight was concerned. A year has passed, the patient is still blind, but the headaches are much less.

In my opinion the cause of the trouble was at or about chiasm, but not involving the hypophysis, for all symptoms of acromegaly were absent.

Case 2. In July, 1912, I was called in consultation through Dr. Sophie T. Kern, in a case of a young woman, age 25, a graduate nurse. Seven or eight months before she had had severe pain in the right ear. There was no discharge or vertigo; she was treated and was soon much better. Six weeks before I saw her she began to have severe headaches in forehead and back of head, but no pain in the eyes. Her vision began to fail and had grown rapidly worse.

Examination showed that the sight of the right eye was gone. With the left eye she counted fingers three feet. The right pupil was two-thirds dilated, with no reaction to light either direct or consensual. The left pupil was also dilated two-thirds, with but slight direct or reflex reaction. All the movements of the eyeball were normal, except outward, the external recti supplied by the sixth nerve being paralyzed.

Ophthalmoscopic examination revealed optic neuritis descendens with hemorrhagic spots at periphery, with blurry edges of optic disk of both eyes.

Examination of right ear showed chronic otitis media catarrhalis, with the usual thickening and retraction of the membrana tympani. There was no pain or sensitiveness in or about the ear.

The case was one of more than ordinary interest from every point of view. Five physicians and specialists, besides myself, had been called in consultation. All agreed that it was a case of brain tumor, as the indications plainly showed, but owing to the existence of the former ear trouble on the right side, all of the others were of the opinion that this was the cause of the tumor; in other words, that it was an otic brain abscess. I dissented from this view for several reasons. There was not the slightest sign of inflammation or sensitiveness in or about the ear; nor was there any evidence of same when the mastoid or regions about the ear were palpated quite forcibly. Again, both eyes were affected. The left ear was normal.

Then the sixth nerves of both eyes were involved—paralyzed. The other external muscles of the eyeball were intact. The sixth nerves arise from a nucleus in the floor of the fourth ventricle and a constricted part of the corpus pyramidale below the pons. It pierces the dura immediately below the posterior clinoid process, lying in a groove on the side of the sphenoid bone; passes forward through the cavernous sinus, enters the orbit through the sphenoid fissure, passing between the two heads of the external rectus, to the muscle. The two sixth nerves are separated one on each side. In this case, as mentioned, the sixth nerve was paralyzed on both sides and the other external muscles not. Hence, I was of the opinion that the tumor or lesion must by pressure, either solid or fluid, or both, involve the fourth ventricle region. Therefore I placed the trouble at the base of the brain above the tubercula quadrigemina and near the fourth ventricle.

Acute mania following the use of atropin solution in the eyes. Dr. Dunbar Roy reports (*So. Med. Jour.*) a case of acute mania in a woman of 52, on the second day of the use of atropin solution one per cent in the eyes every two hours. All her mental symptoms entirely disappeared within 24 hours after discontinuance of the atropin. The author remarks that the use of atropin as a mydriatic in refraction work is also occasionally followed by marked symptoms of atropin intoxication, he having had 20 such cases in a series of 10,000 refractive cases. In children where a solution of atropin is dropped into the eyes for refractive purposes parents should always be warned that a manifestation of the toxic effect of atropin may occur and that these symptoms are flushed face, rapid pulse and breathing, and in some cases a high state of excitement.—*Critic and Guide.*

TWO UNUSUAL INJURIES TO THE EYE

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Burn of Eyeball Due to Caustic Contents of Golf Ball.

RECENTLY the United States Golf Association issued this warning: "Owing to the fact that serious accidents have occurred in the past few years due to cutting open certain makes of golf balls containing acid and other sight-destroying compounds, the Association warns all persons to refrain from this dangerous practice." So it would seem that even our most innocent recreations are hedged about with unseen dangers. In looking up the literature on this subject I have found quite a few cases of burn from contents of golf balls reported both here and abroad; one in particular reported by Crigler of a boy who lost the sight of his right eye as the result of cutting into a golf ball. It seems that certain balls are of the "water-core" variety, the centers of these balls being formed by a rubber bag containing various heavy fluids, mostly highly caustic. Analyses of contents have disclosed hydrochloric acid, solutions of zinc chlorid, caustic soda, etc. These cauterants are subjected to great pressure, as their rubber container is tightly covered by machine-wound ribbons. When they burst or are cut open the fluid contents are expelled with explosive force, generally into the face of the dissector or some innocent onlooker. My particular case was that of an "innocent onlooker."

G. J., age 8, on December 5, 1913, while looking at companion cutting open golf ball, contents of ruptured center spurted into left eye. Was given treatment in amphitheatre with atropin, argyrol, etc., and the next day was seen by me, in Dr. Feingold's service, and the following status noted:

O. S. Conjunctiva bulbi at nasal side thickened white opacity. Coagulation (?) the process extending to the plica semilunaris. The whole cornea, with the exception of a narrow band 2 mm. at temporal limbus, a deep bluish-white, not uniform but with linear clear places resembling an opacity of the lens. The corneal epithelium was

slightly defective. Anterior chamber could only be guessed at as fairly deep, but iris could be seen at periphery. Tension, minus. With focal illumination the anterior chamber was shown to be very deep, the pupil dilated at maximum 8 mm. (atropin had been put in day before at amphitheatre). No further treatment was ordered at this time, except the frequent use of castor oil in the eye at home.

Patient did not return until five days after, and the following status was noted: O. S. Conjunctival and ciliary injection. Two phlyctenulae at upper limbus. Epithelium over the whole cornea more or less defective. A clear band at temporal limbus possibly 3 mm. wide. The stellate opacity had disappeared and in its place there was a diffuse grey opacity with few deep striae running near and parallel with vertical meridian. In the lower nasal quadrant near the center a small grey-white circumscribed opacity, phlyctenula (?). Anterior chamber deep, pupil 6 mm. wide. There was a fine veil in pupil (?), while near upper temporal pupillary margin there were two or three short, fine radial opacities in pupillary area. Tension minus one. Preauricular glands enlarged. Vision, count fingers at seven to eight feet.

Unfortunately further trace of the patient was lost, but this with the other reported cases is more than sufficient for us, both as good (?) golfers and practical sanitarians, to warn the public of the dangerous content of golf balls and advise them against inviting disaster by dissecting any.

References: *Oph. Rec.*, October, 1912; *Jour. Ophth. and Oto-Laryngol.*, November, 1912; *Jour. A. M. A.*, April, 1913.

Injury to Eyeball From Broken Spectacle Lenses.

While at first thought such injuries may seem to be fairly common, I am inclined to believe that they are relatively rare when we think of the number of people wearing glasses. In fact, Dr. M. Feingold, under whose direction I am doing clinical work, tells me that the two cases reported below, although coming to the clinics within two weeks of one another, were the only cases he has ever seen in a long and very extensive clinical and private practice. I am therefore reporting them more as "unusual" as to etiology than that the wounds themselves were out of the ordinary.

Case 1. Mrs. P. J. S., age 43. While working on ladder pulled down hook from picture moulding, and was struck across left lens of

glasses worn at the time, which was broken. Treated at the amphitheatre, where lacerated wound of lid was sutured and conjunctival wound dressed; castor oil used in eye. When seen next day eyelids were inflamed and swollen, with some pain; small wound of conjunctiva bulbi with sub-conjunctival hemorrhage. Recovery was uneventful.

Case 2. Geo. G., age 24. Six days before being seen, while working, head of rivet hit glasses he was wearing at the time, broke them and pieces cut eye and brow. Treatment given at Touro Infirmary at that time, and seen by writer six days after with following status:

Vision, 1/60, 3/60. Scab on right brow, ecchymosis of lid and cheek. Small irregular superficial moss-like cut of cornea. Small hyphaemia, marked ciliary and conjunctival injection. Pupil dilated (cycloplegia?), horizontally oval. Tension, minus.

Recovery, with slight corneal opacity persisting, after a few weeks.

Iodine treatment of diphtheria. The local application of iodine has been successfully employed by Dr. A. H. Thomas (*Brit. Med. Jour.*) in the treatment of diphtheria and scarlet fever, the form used being an ointment containing 5 per cent of free iodine. This ointment is applied as follows: three cotton-wool mops are used, two to remove the secretions and false membrane, and to dry the affected surface; the third, after smearing it with the ointment, is thoroughly rubbed over the inflamed tissue and surrounding areas. These applications are repeated every three hours or, in severe cases, every two hours, until improvement occurs.

Under this treatment, Thomas says, many cases of diphtheria clear up within a few hours, the throat becoming quite free from false membrane on the second or third day. In the scarlet-fever cases, there was remarkable freedom from local complications.

PNEUMO-MASSAGE IN DISEASES OF THE MIDDLE EAR*

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FOR a number of years the writer has been struck by the skeptical attitude of the text-books on otology toward pneumo-massage as a method of treatment in middle ear catarrh. This tone has changed considerably the last six or seven years, but still most of the modern authors advise that it has a very limited field in ear diseases and that it has but little value.

In 1907 M. Yearsley reported the use of pneumo-massage in one hundred and fifty-two ears; thirty were cases of otosclerosis, one hundred and seventeen of chronic middle ear catarrh and five were the sequelae of middle ear suppuration. In one case of otosclerosis the hearing was improved for whispered tones from twenty-four to eighty-five inches, and this was maintained for at least three months. Eighty-six of the one hundred and seventeen cases of chronic middle ear catarrh suffered from tinnitus. There was a permanent improvement in the hearing in fifty ears diminished tinnitus in forty out of eighty-six, and in twenty the tinnitus was completely relieved. In all these cases massage was used as an adjunct to inflation and intra-tympanic injections. In several cases, however, it was not started until inflation and other methods had been given a trial. In fourteen cases marked improvement commenced only when pneumo-message was given, although inflation had been given a fair trial.

It is M. Yearsley's opinion that pneumo-massage is of most value in that stage of chronic middle ear catarrh when the ossicular chain is first becoming restricted in its movements. He regards Paracusis Willisii as an indication for treatment rather than a bad symptom.

Phillips in his "Diseases of the Ear, Nose and Throat" says: "Pneumo-massage of the middle ear sometimes produces a transitory sedative effect upon the subjective ear-noises of severe chronic catarrhal otitis. Deafness is occasionally favorably influenced by this

*Read before the Society of O. O. and L., at Atlantic City, July 2, 1914.

form of treatment due to diminution of the pressure sensations in the ear, and sometimes also from vertigo." He says further that, "mixed catarrhal and labyrinthine deafness is not usually benefited by pneumo-massage, except when employed for the prevention of adhesions, and that it is also contra-indicated when the drum-membrane is atrophic, even though the ossicles are bound down and immovable on account of fibrous deposits."

Politzer says that "pneumo-massage not only produces in many cases a decided improvement in the hearing, but a temporary or permanent diminution of the subjective noises. It has exercised a decidedly beneficial effect upon the head symptoms, such as heaviness, fullness, deafness, etc., which are not infrequently entirely cured by this method of treatment. Pneumo-massage is contra-indicated in inflammatory affections of the middle ear and in primary uncomplicated diseases of the sound-perceiving apparatus." He says in regard to otosclerosis that "most forms of treatment are ineffectual and in some cases detrimental; pneumo-message brings about a more striking improvement in the hearing than inflation per tubum."

Ballenger, in his third edition of "Diseases of the Throat, Nose and Ear," says that "pneumo-massage has been for deafness and tinnitus of catarrhal origin very greatly exaggerated." He says, however, "it has a place in aural practice, as the mucous membrane is brought into a more active and resistant state and the labyrinth is stimulated to greater functional activity, in a limited number of cases the ossicles are rendered more mobile and transmit sound better after its application. Tinnitus is also occasionally relieved by it."

Barnhill in his "Modern Otology, 1907," says, "The topic may be dismissed with the statement that many patients will not be at all affected by pneumo-massage; only a few are improved by its most careful employment and all may be made worse by its indiscriminate and unscientific use."

Dench in his "Diseases of the Ear, 1909," says, "Any apparatus for pneumo-massage cannot improve a patient but must, in many instances, cause an aggravation."

This experience is so contrary to mine, which has extended over fifteen years in the use of massage of various types, that I have many times thought of bringing the matter up for discussion before this body.

In discussing with one of our members in Denver last summer a new instrument which he was perfecting for internal massage of the middle ear, I mentioned my use of pneumo-massage, as I did soon afterwards to an ex-president of this society, who said that I had never improved a case by means of pneumo-massage and was fooling myself if I believed that I had. This determined me to study up my records of the cases that I had treated since I began to use pneumo-massage, and I herewith present a short analysis of a number which have been under my care the last thirteen years. The cases presented are those that were under treatment some length of time, and, so far as possible, cases that were seen one or more times after the original consultation and treatment had ceased.

Some years ago, Dr. Bellows, in one of his papers before this society, made the statement that he had made it a plan to tell his patients that if they would continue to have the good hearing which had been secured through the first course of treatment, they must take care to have the catarrhal conditions underlying their ear troubles looked after whenever there was an aggravation of the condition, especially in the winter and spring. By this means, he said, he had succeeded in retaining satisfactory hearing in a great many patients for years.

It has been my practice for some time to warn patients when they ceased treatment that the results would not last forever, especially if they had more or less nasal catarrh, which in a great majority of cases becomes more pronounced each year as they grow older and their resistance to atmospheric changes lessens. At the present time I have under observation quite a number of patients who have a few treatments two or three times a year, whenever they feel that their catarrhal condition has lessened their hearing. By this means I have been able to keep a number of these cases in a good condition over a series of years.

The text-books only hint at what always seemed to me to be the chief indication for the use of massage, particularly that form known as pneumo-massage.

1. "Audition is the function of reception, conduction and perception of sound-force, and the perfection of this function depends on the integrity of the external ear for reception, the middle for conduction and the internal ear for perception. It is the function of the middle ear that is especially increased by massage. Massage gives mobility to rigid articulations, freedom to capsular or intercapsular ligaments, restores wasted muscles, increases the circulation and checks destructive metamorphosis, aids nutrition and lastly, but most vital of all, it energizes the nerve at the center and terminal."

Only a few authors are as enthusiastic or give it as wide a range as does the late Dr. Houghton in this paragraph.

After I had been using pneumo-massage for some little time I gradually came to feel that my greatest success came from producing at each treatment more or less hyperaemia of the membrana tympani. When I came to know something of Dr. Bier's explanation of hyperaemia as a means of relieving inflammatory conditions, I came to believe that this was the most logical explanation of my success with massage. It seems to me that if an increased arterial circulation can be brought about in the middle ear, retrograde changes will be stopped and new life and functionating power will be secured even if motility of the bones and membrana tympani is not increased.

The method employed has been a gradual growth from the old stimulating musical massage, which endeavored through the use of a guitar or some other musical instrument to stimulate the perceptive mechanism of the ear and arouse to life nerve-elements more or less atrophied from non-use. The difficulty here was to get the note that would exercise the atrophic nerves.

The next step was the use of varying tones which could be produced by varying the tension in the ribbon of a faradic coil. Neither of these methods produced much effect, and then the more systematic and extensive use of Siegel's otoscope was begun, using the mouth to produce the vibrations in the canal and membrana tympani.

A little later came the electric motor, so arranged as to produce a pump with a three-way motion-giving pressure, suction, and alternating pressure and suction.

The treatment which has been followed in recent years has been to give the ear a little vigorous massage with Siegel's otoscope, producing as wide excursions of the membrana tympanum as is possible in a more or less stiff and thickened membrane. After cleaning with a swab the mucous membrane of the naso-pharynx and of the nares with benzoinol having in solution eucalyptol or menthol (unless some less dry oil was indicated) the Politzer method of inflation was used, except where there was one-side deafness or one Eustachian tube was much less permeable than the other.

Pneumo-massage was then given, beginning with pressure for a minute or a minute and a half, followed by alternating pressure and suction, and lastly by more or less continuous suction. This treatment is given through the external auditory canal by means of a stethoscope with small olive-shaped points, which can be fitted into the canals with nearly an air-tight connection. Formerly I allowed the patient to hold the tips in their ears, but for a number of years past I have personally given the treatment, as I feel that by holding the arms of the stethescope with just sufficient force to get the right amount of vibration and stimulation to the membrana tympani the best results will be secured. There will be a feeling of clearness and warmth in the ears with clearness in the head. There will also be some redness of the membrana tympanum along its borders and along the manubrium, which will be best accomplished when the fingers holding the stethoscope feel the vibration which is being extended to the canals and middle ear. The attic will be congested in many cases.

The instrument used to produce this pneumo-massage has been a Wappler motor and pump, the latter having an excursion of two centimeters for its piston. The speed of this instrument can be varied, but there is no method of increasing or decreasing the length of the piston strokes. I have not found it necessary in many instances to decrease the force beyond what could be done by holding the stethescope more or less firmly in the canals. There is, however, a set screw in the cylinder which can be used to lessen its force.

The effect of this treatment has been in most cases to increase the hearing distance for the voice usually out of all proportion to that produced for the acoumeter or the watch. I have generally been much more successful in increasing the hearing than in relieving the

tinnitus. I am very careful not to promise very much in the way of relieving tinnitus, although I am able to prognose a probable large increase in the hearing. I am still looking for some method to relieve tinnitus, which is the symptom for whose relief many patients consult me.

Vibratory-massage has not proved of any particular value in my hands, although it has been used in quite a number of cases. I have yet to see a case where it relieved the tinnitus or increased the hearing beyond what pneumo-massage had already accomplished.

At the first examination each case had the history recorded and the hearing tested for the voice, or the forced whisper if the function was not impaired beyond hearing whispered tones. Numbers 20 to 99 were used, no words or consonants being ordinarily employed. Most of the cases had the hearing examined with an acoumeter having a somewhat more intense tone than Politzer's; in others the latter alone was used. A watch heard by an average ear at one metre was used for this test. Hartmann's series of tuning-forks was used to determine the relation of bone to aerial conduction.

No cases having profound deafness and loss of bone conduction are among the cases cited. The high and low tone limits were not determined with the Gelton whistle and Dench fork except in doubtful cases, and none are here recorded.

Case 1. Mrs. J. H., a nervous woman with many hysterical symptoms, was first seen in May, 1904. She had been treated for suppurative otitis six or seven years before, and after the removal of some polypoid growths she had grown steadily worse, with a constant ringing and throbbing tinnitus. She had had many attacks of suppuration since scarlet fever when a child. The head felt confused.

The ears were cleansed, treated with peroxide of hydrogen, inflation and gentle pneumo-massage for six weeks without much improvement to ear and head sensations. At the beginning the

R.H.D.W.V.—35 cm.	Ac.—35	W.—4
L.H.D.W.V.—15 "	" —10	" —2

In July

R.H.D.W.V.—190	R.H.D. Ac.—65	R.H.D.W.—10
L. " " — 80	L. " " —19	L. " — 3

The ears were then dry.

Attacks of suppuration with tinnitus and discomfort in head were treated in 1906, 1907 and 1911. The hearing fell often to nearly the first figures, only to come back with a stoppage of the suppuration and the gentle use of pneumo-massage.

In December, 1913, the

R.H.D.W.V.—60	R.H.D. Ac.—400	R.H.D.W.—5
L. " " —32	L. " " —100	L. " —2½

In June, 1914, there was some accumulation of inspissated discharge in both ears

R.H.D.W.V.—74	R.H.D. Ac.—600	R.H.D.W.—6
L. " " —48	L. " " —250	L. " —4

She has had no treatment for six months.

Case 2. A sea captain, aged 68, in Atlantic Coast Service. From childhood had occasional attacks of earache, with suppuration on two occasions for a few days. He was first seen in July, 1911. He had felt he was growing deaf and ears had recently felt full, with some tinnitus. The

R.H.D.W.V.—250 cm.	R.H.D. Ac.—600	R.H.D.W.—6
L. " " — 40 "	L. " " — 15	L. " —2

Air conduction was better than bone for C & C-2 forks. C-4 was not heard bone. He was treated during the fall and early winter of 1911 and 1912 by pneumo-massage and inflation. By January, 1912, his

R.H.D.W.V.—875	R.H.D. Ac.—1000	R.H.D.W.—43
L. " " — 85	L. " " — 32	L. " — 3

This was the maximum hearing secured and was still held six months later. All tinnitus had then ceased and ears felt normal.

Case 3. R. D., aged 15. Has been growing deaf from constant nasal catarrh since he was a small boy. Has had occasionally some discharge from ears following an acute inflammation of middle ears. He had had three attacks when first seen in January, 1906. The

R.H.D.W.V.— 45 cm.	R.H.D. Ac.— 3	R.H.D.W.—0
L. " " —130 "	L. " " —230	L. " —8

Rinné was negative, but the eustachian tubes could not be freely opened. In a few weeks the discharge ceased under treatment with gauze drainage and peroxide of hydrogen locally. In March the

R.H.D.W.V.— 500 cm.	R.H.D. Ac.—400	R.H.D.W.—10
L. " " —1000 "	L. " " —900	L. " —20

after pneumo-massage had been used for six weeks. A little treatment in the spring of 1907 still further increased the hearing as did a few in the fall of 1908. At that time the

R.H.D.W.V.—1000 cm.	R.H.D. Ac.—1800	R.H.D.W.—140
L. " " —1100 "	L. " " —1800	L. " —160

He has had no further trouble and hears well at the present time.

Case 4. Mrs. J. O., aged 61. Deafness dates from scarlet fever when five years old. Had a discharge for many years. She has pressure in ears with itching and dryness of canals. Deafness and tinnitus has greatly increased for the past two years. In March, 1912:

R.H.D.W.V.— 16 cm.	R.H.D. Ac.— 5	R.H.D.W.—0
L. " " —130 "	L. " " —19	L. " —8

In the right there was only aerial conduction; bone was gone and in left much less than bone. By April pneumo-massage and inflation had increased the

R.H.D.W.V.— 25	R.H.D. Ac.— 9	R.H.D.W.—h. c.
L. " " —265	L. " " —50	L. " —10

Two months later continued treatment had raised the

R.H.D.W.V.— 35 c.	R.H.D. Ac.— 16	R.H.D.W.—h. c.
L. " " —350 "	L. " " —250	L. " —11

And the head was clear and the tinnitus much lessened.

Case 5. Mrs. M., aged 56; in good general health. No family history of deafness or trouble when a child. She has had a ringing tinntus in the left ear for two years. This ear feels stopped. After rhinitis ears are stopped, deafness increases and tinnitus is aggravated. All these symptoms are increased by opening the eustachian tubes. In January, 1913:

R.H.D.W.V.—140 cm.	R.H.D. Ac.—350	R.H.D.W.—5
L. " " — 18 "	L. " " — 20	L. " —3

Aerial conduction was better than bone in both. This was a case of tubal catarrh, as m. t. were thin and papery. Inflation had not in the least improved the hearing. Gentle pnuemo-massage and inflation with an oil spray to the nose and throat were used. After three months the

R.H.D.W.—335 cm.	R.H.D. Ac.—800	R.H.D.W.—16
L. " " —260 "	L. " " —100	L. " — 5

Without treatment two months later the

R.H.D.W.V.—400 cm.	R.H.D. Ac.—400	R.H.D.W.—16
L. " " —250 "	L. " " —103	L. " — 8

Case 6. J. L., aged 57, a healthy man working hard every day.

He had a few earaches as a child, but no deafness was noticed until two or three years ago. After a Turkish bath he began to have pressure in ears occasionally, with throbbing tinnitus. He heard C fork, best bone, but all the others best in the air. A slight discharge was found in the right canal. Peroxide followed by boracic acid in alcohol 4 grs. to oz. was used and the discharge ceased in four or five weeks. The tinnitus ceased after the third treatment. The

R.H.D.W.V.—700 cm.	R.H.D. Ac.—300	R.H.D.W.—15
L. " " —600 "	L. " " —600	L. " —65

Pneumo-massage and inflation were used twice a week from September 8 to October 27. At that time

R.H.D.W.V.—925 cm.	R.H.D. Ac.—950	R.H.D.W.—33
L. " " —925 "	L. " " —850	L. " —32

A month later the right ear was dry and the

R.H.D.W.V.—1100 cm.	R.H.D. Ac.—900	R.H.D.W.—33
L. " " —1100 "	L. " " —850	L. " —35

These cases were selected from all kinds of catarrhal cases with thick membrani tympani, whose movement was almost nil, to thin papery ones where very gentle motion had to be used to prevent relaxation. Pneumo-massage has given me fairly uniform and useful results in all these kinds of middle-ear catarrhal deafness, and has helped in suppurative. No other form of treatment has given the same increase and uniformity of results as pneumo-massage.

Discussion

G. W. Mackenzie: I do not doubt the good results of the treatment in these cases, but I object to the conclusion drawn. It is impossible to estimate how much of the result is to be attributed to the pneumo-massage and how much to the other means employed. Pneumo-massage may be a very good thing in selected cases; it may be a very bad thing in others. This fact in itself rather commends it to me, because I do not care for any form of treatment that can not do harm under unfavorable circumstances as well as good under favorable. I have seen cases where the patient has been overtreated; such a case came to me with the posterior half of the membrane so relaxed that it almost hung over the hammer handle. Let such patients alone and they are more likely to get better without local treatment than with it. I have had particularly good results in acute cases with pneumo-massage. If I have an acute catarrhal condition to treat with

sudden diminution of hearing, tinnitus, and the tube occluded by inflammatory swelling, I find the case does well if cocain and argyrol are used in the tube as well as about it. While waiting to do something by inflation it may be well to use pneumo-massage, provided it is not going to terminate in a suppuration.

In chronic cases pneumo-massage has not been so satisfactory with me. In order to measure the improvement I take my patient's hearing with the whispered voice before instituting treatment. I like it better than tests with the acoumeter. At present I take the time test with the Rinné, and generally find it negative. You may, however, find a slightly positive or positive-negative Rinné. Twenty seconds negative Rinné may change to a five seconds after treatment. When this occurs I have reason to believe that I am going to get good results from treatment. You can get some improvement in every chronic case, at least so far as tinnitus is concerned, and that is worth working for. Patients frequently feel fine immediately after treatment and come back saying, "I felt fine right after you treated me, but it did not last till the following morning." To get the best results and to know just what we are attempting we must make accurate diagnosis; we must go over each case from A to Z and find out the exact condition, when we may have a good chance to help the patient to a better state of health.

E. H. Linnell: How frequently do you give treatments?

John L. Moffat: The writer spoke of penumo-massage—which variety? Cold, hot, rapid, slow, long or short? I remember a doctor coming to me for an annoying slight tinnitus which had been refractory to pneumo-massage (and other treatment?) by a fellow practitioner. I gave a very short (maybe one minute) very rapid and—if I remember correctly—heated pneumo-massage with prompt relief, which became a cure after one or two repetitions upon recurrence some days or weeks later.

I consider pneumo- and vibratory massage essential to adequate armamentarium for the otologist.

Dean W. Myers: I have used pneumo-massage in chronic cases for many years. I think the Wappler instrument takes too long a stroke. I used it for a good many years, but now I prefer the Meyer-

Rowen massage and vibrator, which I like very much. My method is to use it for a minute at each sitting with a very slow stroke. One thing not mentioned that I approve of very highly is the high-frequency in the ear. I have had some excellent results with its use.

H. D. Schenck: The treatment lasted from four to six days depending upon the time it took to get a reaction. The congestion lasted for three days usually, so I waited until the fourth day before repeating. If you notice the title, there was no restriction of this paper to catarrhal conditions. I have never tried a change of stroke because I use this one kind of instrument only. I tried the heat, but did not find that it added to the benefits of the patient. Medicines were used in almost all of these treatments, and of course that feature must be taken into consideration in coming to a conclusion as to the results of pneumo-massage. All the adjuvants have a share in the results. I can not say that pneumo-massage did it all in the cases reported because other things were used, but I think that it did have an important part in the results. My judgment was that it helped a good deal.

To prevent postoperative nasal hemorrhage. Adolph I. Schwartz (*N. Y. Med. Jour.*, Oct. 31) after operation cauterizes the cut surface with the electrocautery then wipes it with 100 per cent silver nitrate solution on an applicator, orders ice-cold compresses and that the nose be not blown through the unoperated side. [Why both electrocautery and silver nitrate?—J. L. M.]—*Med. Rev. of Rev.*, February.

THE JURY, THE BULWARK OF FREEDOM

Leon A. Berezniak,
Of the Chicago Bar.

IT is always pleasant to break a lance with a friend, especially when one feels armed in the cause of the right. Therefore, it is doubly pleasant for me to combat some of the ideas advanced by my warm friend, Dr. Burton Haseltine, in the January issue of The Journal of Ophthalmology, Otology and Laryngology, under the caption, "The Great American Farce—Trial by Jury."

In taking issue with Dr. Haseltine I must first call attention to the fact that his show does not justify the advertising; that is, that his article does not prove anything wrong about the jury system, but rather calls attention to some admitted defects in our methods of legal procedure which most alert lawyers will grant, while it asserts as defects other things which are far from being so.

I may say in passing, that we lawyers are not such confirmed lovers of the musty past as he seems to imagine. We are, I admit, perhaps overslow in adopting changes in method, but the real science of the law, while it is always—and rightly—somewhat behind the most advanced progress, very quickly recognizes changes in conditions which are permanent and adapts itself thereunto. Of this Dr. Haseltine can satisfy himself by the most casual perusal of court decisions affecting that part of our lives influenced by modern inventions and modern living conditions.

The jury system, to get down to the facts at issue, is ancient—just how ancient I am not prepared to say. Certainly, it was in use and roundly and soundly abused in ancient Greece. We have today, in America, no such abuses of the system as obtained then, for we have no professional "jury class," as had the Athenians, and therefore every litigant has a real right to expect such a meed of justice as human fallibility permits, once he comes into court.

By that I do not mean that justice never miscarries. It does, unfortunately, every day in the week in our courts. But that is because

we are human and fallible. What I do mean to assert is that there is always—or almost always—present the desire upon the part of jurymen to do exact justice. They fail, ofttimes, as we all fail in what we undertake, but the intent is there.

And, contrary to the common belief, courts do not operate entirely for the benefit of the rich. In fact, the very rich are often heard to complain that, because of common prejudice against men of their station, they are unable to obtain justice. For myself, I do not think their complaints are better founded than those of the poor.

With trial by jury, so ancient an institution, however, it is plain enough that Dr. Haseltine is not warranted in calling it "The great American farce." If it is a farce, it is certainly not an American farce, for it obtains today in practically all civilized countries, and is almost as old as civilization.

But perhaps he means—since we musty lawyers must be sticklers for exactness of thought and expression—that the manner in which American juries handle cases is what makes the American system farcical. I am not disposed to concede this any more than to admit that Americans are beneath the average of other nations in intelligence and love of justice, and I am not prepared to do this.

Despite the accusation that the legal profession is, like Ephraim, joined to its ancient idols, I make bold to say that whenever it is proposed to do away with an ancient institution which admittedly serves some useful function, even though it performs its duties faultily, it is first essential to suggest something adequately to take its place. That is, what can we substitute for the jury system if we do away with it?

The best Dr. Haseltine has to offer on this score is a superior jury system; or, to use his own words, to have "a change in the methods of selecting and handling jurors so that high-grade citizens will not so often be eliminated."

I submit in all fairness, with no desire to quibble or palter over mere words, that when he offers this as his primary remedy, he is really abandoning his entire case, summed up in his title, which indicts "trial by jury" as "the great American farce." For it is plain that,

when he casts about for something to take the place of this "great farce" the best he can find is the farce itself, divested of whatever evil has grown up about it.

I am willing to admit that many improvements in our legal system are possible; nay, that Dr. Haseltine himself suggests several that are desirable, such as the employment of state experts and the bringing back of the prosecuting attorney to his ancient and historically correct function of "state's attorney." It will be observed, in this connection, that Dr. Haseltine really reverts to the ancient principle of the English common law, for the theoretical—and formerly the actual—functions of the state's attorney were to inquire into any matter presented to him so closely as to satisfy himself in his own mind whether there were reasonable grounds for prosecution or not, and, in the actual prosecution, to bring forth all the facts, rather than to endeavor merely to procure a conviction.

Queer, isn't it, that when we come to "modernizing" and suggesting "up-to-date methods," we must go back several hundreds of years for our remedies? Perhaps there is some good reason for lawyers looking into those musty tomes occasionally, after all.

And, since I am writing this in rather rambling fashion, while I am on this topic it might be well to advert to the fact that the jury system, under the English common law, is the carrying out of the idea of a man's being tried by his peers, really meaning neighbors, and permitting neighborhood opinion rather than the dogmatic or one-ideaed notions of bench experts to determine a man's right to life, liberty, the pursuit of happiness and the enjoyment of his property. Nowadays there is considerable talk—although, to do Dr. Haseltine justice, he does not advocate this—to the effect that judges should decide all cases.

I wonder whether those who do the talking know anything about Judge Jeffreys, of infamous memory, in England, and how he, by judicial dicta, condemned hundreds of innocent folk to death? I wonder how many who are rashly offering this as a substitute for trial by jury would be willing to go, say to Mexico or some other semi-barbarous land, and submit themselves, their lives and their fortunes to the decrees of judges? Of course, it will be replied, Mexico has trial by jury. So it has, in normal times, but when orderly

procedure is overturned, as now, we have the spectacles which the world is today witnessing. For that matter, war also witnesses the enforcement of decrees by individual judges, as army officers in war are really judges of many, with power of life or death and disposition of property rights over them. I wonder how many, who decry our jury system, would be willing to substitute the very effective and rapid "justice" meted out by army-officer-judges in wartime?

True, our juries are not always ideal, but what we need is not so much laws changing "the methods of selecting and handling juries" as more public spirit in the minds of the "better classes," which will prompt them to do their civic duty and serve as jurymen. Their "handling" by some attorneys, I admit to be somewhat harsh, or rather, unpleasant, at times, but this is much rarer than is commonly supposed. I know, for I have taken part in the selection of many juries and witnessed many more. Still, I agree that we could profitably improve our methods in this respect, although I stand by the assertion that the "better classes" are far too thin-skinned, and shirk their civic duties too much. And popular notions to the contrary notwithstanding, I maintain that the average trial lawyer prefers an intelligent to an unintelligent jury. Lawyers are only human. They like their work to be lightened where possible, and it is far less work to explain a proposition to twelve intelligent men than to twelve clods, or even to one stupid person. The results are pretty much the same. I have found very little difference in the collective conclusions of men drawn from various walks in life.

Dr. Haseltine himself unwittingly admits this when he cites the case of an intelligent and honest judge of the Superior Court of Cook County taking a rather absurd view of a medical case, and the jury bringing in the right verdict. His contention is that the suit should never have been brought and that the doctor should never have been compelled to submit to the expense and annoyance of defending it. Perhaps so, but the jury system has nothing whatever to do with that, and I doubt if we can ever have a system this side of the millennium which will preclude men from attempting to take advantage of their fellows by any means in their power, through the machinery of the law or otherwise.

In the case he cites, however, Dr. Haseltine himself shows that but for the jury, this physician would not only have had to defend his case, but have had to have paid damages to boot. The jury saved him that, although the judge seemed to think there was a cause of action.

Dr. Haseltine inveighs against ignorant jurymen weighing expert testimony, yet here was a case where a judicial expert was about to do an injustice, and the ordinary, commonplace, much-berated, hard-headed jury saved the defending physician.

If I wished, I think I could rest my case upon the jury being the bulwark of our liberties upon Dr. Haseltine's own illustration, for certainly I could have adduced no stronger illustration.

In conclusion, I would say that in all great state trials under the English common law system where great injustice has been prevented, it was the human justice of the jury which brought about acquittals; that the humanity and mercy of juries has overturned and set aside the straight-lacedness of the law itself on many occasions, where judges, owing to the character of their training, would probably have erred on the side of strict legal exactness, and perhaps of strict legal justice but not human justice. Incidentally, this is one of the real reasons for the jury system, for the law early recognized its limitations. I maintain, further, that no effective substitute has ever been discovered for the jury system, although many, such as the "trial by ordeal," and others have been tried, and that finally, no better system can be discovered than "neighborhood judgment" this side of the millennium, when there will be no crimes and no lawsuits, consequently no need for judges, juries or lawyers, and that, although there are faults, and many, in our legal system which should be remedied, and even some faults in our jury system, that it takes its stand beside the freedom of the press and of speech as one of the trinity of customs which guard the sanctuary of liberty to mankind.

105 West Monroe Street.

A REPLY

Chicago, January 19th, 1915.

Dr. Burton Haseltine,
Chicago, Illinois.

My dear Doctor:

I have read with great interest and entertainment, as well as instruction, your article entitled "The Great American Farce" in the January number of THE JOURNAL OF OPHTHALMOLOGY, OTOLOGY AND LARYNGOLOGY.

While the article is written with far greater insight into the real difficulties and discrimination with regard to the causes of the evils alluded to than we are accustomed to hear from your learned and highly revered profession, yet you fall into an error that is so common not only to your profession but to the laity at large, that I may term it as positively vulgar. That is, the supposed superiority as triers of fact of professionals, such as judges in the case of ordinary fact, or of physicians, engineers and the like in cases of special facts falling within their special field of study and investigation on the one hand, over jurors chosen at random, if you please, on the other.

I need adduce no more pointed instance of this fallacy than the citation of your experience in the third paragraph on page eighty of your article, in which a judge whom you characterize as a competent and intelligent judge (and to whom, if I remember your conversation touching this incident correctly, I would attribute the same qualities) fell into as vulgar an error, as in your next paragraph you show what might be expected from "janitors, barbers and grocers." Let me advise you that the experience which you relate is by no means uncommon to the observation of lawyers whose practice brings them frequently in court; nor is the fallibility of judges with regard to the same subjects upon which janitors, barbers and grocers may be expected to be ignorant, confined by any means to medical or to other technical questions. The whole fallacy of the assumption that professionals of the sort above indicated are better triers of fact than the public selected at random, is based upon the circumstance that the professional man will never assimilate in his judgment the most obvious circumstance of the professional man's individual history

which tend to disqualify him for the decision broadly speaking of questions of fact; and that is this: The average judge starts out in life as a schoolboy in the primary grades, progresses through the high school to college, then to the professional school, and then to the practice of law. In most instances he is, at least during the period embraced in the many years required for this process, usually living upon the means furnished by his parents; regards himself as somewhat better than his fellow-beings and either scorns general contact with them or finds himself by training incapable of mixing or understanding with them and the affairs of men in general. He is thus brought to the beginning of his professional career an absolutely artificial person. The next interim between the commencement of his practice and the assumption of the duties of a judge tend somewhat to correct the defects of his training above noted, but fall far short of making him a man of common sense and common understanding. This is the reason that twelve men, including janitors, barbers and grocers, if you please, may, by their united judgments, observations and experience, and in most cases do, arrive at sounder judgments upon questions of fact than do judges to whom questions of fact are submitted to their individual decision, without aid of a jury.

What is true of the lawyer above stated is quite as true of the physician or the engineer.

Another fallacy, common to your profession with regard to a proposition which we very frequently hear of the appointment of experts, is twofold.

First, you overlook the fact of human zeal, which in the case of persons thus appointed, the actual experience of those who are brought in contact with such persons shows that zeal is quite as misleading to their judgment and the impartial exercise of their powers as is political ambition or even actual bribery. Whether such a person be a physician or a state's attorney, or any other person of that sort, the human nature in him, which is not only the first but is as well the last influence which controls and determines his action, causes him to take a view favorable or unfavorable to the side first presented to him and to be more hospitable to views tending to confirm that view

than those which tend to condemn it. It is all well to answer to this proposition that the essential goodness and fairness of human nature may be depended upon to correct that tendency; but those of us who have met the situation in a practical way know that it does not.

Second: The idea of the appointment of physician experts, or experts in any other kind of profession, assumes that it is possible under the American system of government that such appointments will be based upon fitness rather than political expediency. Anybody who knows anything at all about public affairs knows that this is not true and if he will only apply his common everyday knowledge of public affairs and public events to the solution of such a question he must thereby be brought to the conclusion that the hypothesis of an appointment of such experts based upon merit and fitness is absolutely untenable. For instance, the intolerable Justice of the Peace system which cursed this community for so many years was due in part to the fact that the Justices of the Peace instead of being elected were appointed by Judges of the Circuit and Superior Courts. These latter judges are elected and compare favorably, if not more than favorably, with any judicial body in this country, both for ability and integrity; and yet when such a body of men created a subordinate judiciary known as the Justices of the Peace, you know as well as I what an awful mess they made of it. Even where appointing bodies are honest and fair to the rare extent of being free from political bias, we find that the spirit of compromise as between different members of such an appointing power, or where the appointing power is lodged in a single individual, the same spirit of compromise as between the claims of conflicting aspirants generally finds the course of least resistance in the choice of a negative, that is, a mediocre aspirant.

I was reluctant to write this letter because I knew that it would necessarily lead to considerable volume and into grounds of difference of opinion for which there is no present solution and which I deem to be from their very nature necessarily insoluble.

Yours truly,

Samuel B. King,
Attorney-at-Law.

ANOTHER REPLY

Chicago, January 21, 1915.

My dear Doctor Haseltine:

I have received the January issue of THE JOURNAL OF OPHTHALMOLOGY, OTOLOGY AND LARYNGOLOGY, and I have examined with interest your article on "The Great American Farce, Trial by Jury." Allow me to compliment you on the presentation of this subject, that is, if one in my profession may presume to pass comment on such a subject. In my opinion the jury system is one of the heritages of the past which has outlived its usefulness. However, at present it seems useless for the legal profession to urge a change in this system, as the general public believes that this would be a move to put the administration of justice in the hands of the lawyers.

I am particularly interested in your comments on the ——— case, and it seems to me that if there is a criticism of this case the burden is on the medical profession for advancing a wrongful theory. Surely no lawyer would have thought of this. However, there is no use in trying to segregate blame to any particular profession or class of people. I am of the firm opinion that the average of integrity and ability establishes the same norm in practically any walk of life.

I refrain from a detailed analysis and criticism of your article on obscure sinus disease in relation to general health. Doubtless you would be interested as to my professional opinion as to this. However, I refuse to testify until I have received a substantial fee in advance.

Allow me to extend my best wishes.

Yours very truly,

Attorney-at-Law.
H. C. LUTKIN,

"A diagnosis of 'glaucoma' is as complete as is one of 'dropsy'; as modern medicine is not content with the latter it will not long remain so with the former."

CURRENT LITERATURE

Archives of Ophthalmology. January, 1915.

*1. Report of 100 Successive Extractions of Cataract in the Capsule after Subluxation with the Capsule Forceps. A. Knapp.

*2. Purulent Meningitis Following Penetration of an Eyeball by a Fishhook. C. A. Veasey.

3. Loss of Vitreous in the Intercapsular Cataract Operation and Its Prevention. W. A. Fisher.

4. Ophthalmoplegia Interna, the Result of Lead Poisoning. L. D. Brose.

5. Concerning Removal of the Eyeball. I. Exenteration vs. Enucleation. H. S. Gradle.

*6. Epibulbar Sarcoma, with Microscopic and Macroscopic Sections. L. W. Crigler.

7. Report of Two Cases Showing the Effect of Syphilis on Injury of the Eye. H. N. Stark.

8. On Decompression Operations in Diseases of the Optic Nerves. Prof. A. Bednarski. (Trans.).

9. Clinical Observations on Idiopathic Iridocyclitis and Sympathetic Ophthalmia. W. Brock. (Trans.).

*1. Dr. Knapp reviews his experiences of 100 intracapsular extractions after subluxation with the capsule forceps. He tried the Smith-Indian operation in New York, after a period of tutorage under Colonel Smith, but abandoned the operation. In the subluxation cataract extraction operation the Kalt capsule forceps are employed, and the lens is gently moved from side to side, up and down, and rotated to free the lens from its suspensory apparatus.

The delivery of the lens is accomplished by "somersaulting" by pressure applied straight back on the lower part of the cornea with a Smith's hook.

Of the 100 extractions 59 were mature, 26 hypermature and 15 immature. Prolapse of the vitreous occured in 16 (the slightest loss of vitreous was counted as a prolapse). Of the 100 cases 76 were uncomplicated and 24 complicated.

The visual results were: 20/15, 5 cases; 20/20, 18; 20/20, 9; 20/30, 27; 20/40, 11; 20/50, 7; 20/70, 13; 20/100, 1; 20/200, 2; counting of fingers, 4; projection faulty, 2; total loss, 1.

*2. Dr. Veasey presents a case of fishhook in the eyeball. The cornea was the site of entrance, the barb passing to the interior of the eye, and the point penetrated the lens. Seven hours elapsed before the hook could be removed. Enucleation was advised and refused. Sixty hours after the accident

and after pus had presented in the eyeball, the patient submitted to enucleation. On the following day the symptoms of meningitis were present. A lumbar puncture was made and a pure culture of an encapsulated pneumococcus was obtained from the spinal fluid.

The patient died on the sixth day following the injury.

*6. An epibulbar sarcoma occurring between the insertion of the internal rectus and the corneal margin is reported by Dr. Crigler. It presented a small black tumorous mass of about 8 mm. in the horizontal and 5 mm. in the vertical direction in size. The superficial layers of the cornea were slightly elevated where the tumor mass encroached upon it. A portion of the tumor was excised for examination. The microscopical diagnosis was large and small celled melanotic sarcoma. An enucleation of the eye was done.

Seventy-three cases of epibulbar sarcoma have been published, of which 53 were treated by primary abscission. Of these 36 had recurrences. The writer advised an immediate enucleation of all epibulbar sarcomata.

American Journal of Ophthalmology. January, 1915.

1. Further Observations on Tumorlike Hyperplasias of the Palisade Cells of the Pars Ciliaris Retinae. A. Alt.

2. The Action of Optochin in Blennorrhoeic Conjunctivitis. E. Pusearin.

The Ophthalmic Review. January, 1915.

*1. Operation for Epithelioma of the Lower Lid. F. Fergus.

2. A Case of Retinal Detachment in a Myope Treated with Rest in Bed, Retaining Useful Vision for the Past Two Years. R. R. James.

*3. A Case of Intracranial Traumatic Anterio-venous Aneurism, Affecting Both Eyes. W. G. Sym and A. Miles.

*1. The plastic operation described by Dr. Fergus was devised to correct an epithelioma which occupied about two-thirds of the outer part of the lower lid. The diseased tissue was removed and a skin flap was taken from the outer part of the cheek and turned at a right angle so as to cover the denuded area. The operation as described by the author is only applicable to females, as in the male the beard occupies the area from which the flap is taken.

*3. A very interesting case is reported by Drs. Sym and Miles in a man who received an accident by being thrown out of a carriage while driving. He was thrown on his head and sustained a basal fracture in the middle fossa. Hemorrhage occurred from the nose and on regaining consciousness he complained of buzzing in both ears. A few days later he could not raise the right eyelid or move the eyeball to the right or left. Within a week the eyeball was protruding and the vision had failed greatly. The conjunctiva began to show congestion, from which numerous hemorrhages occurred.

On account of the severe nature of the hemorrhages a ligation of the bleeding points was tried, but the hemorrhage would occur at another spot, so enucleation was performed with satisfactory result. Eight weeks later the left eye was becoming prominent and congested and the noises in the head

were severe. The eye movements were also becoming restricted and the vision dimmed as in the other eye. A bruit was heard over the temple which was synchronous with the heart beats.

A diagnosis of traumatic arterio-venous aneurism of the right side was made, and a ligation of the right common carotid artery was done.

Immediately after regaining consciousness from the operation, the patient reported that the severe noises had ceased. Improvement was steady and complete recovery ensued and the vision returned to normal.

The Ophthalmic Review. February, 1915.

1. Limbal Puncture. Priestly Smith.

2. Trypanosomiosis as a Course of Iridocyclitis. J. W. H. Jellett.

The Ophthalmoscope. January, 1915.

1. "Eye" in Sport. R. W. Doyne.

2. A Peculiar Form of Retinal Atrophy in the Dog. George Coats.

William McLean.

Deutsche Zeit. für Chirurgie. October, 1914, CXXXI. No. 5-6.

*1. Plastic Operations on the Oesophagus. A. Jainu.

*1. Jainu has two more cases to report of his weird but ingenious operation of making an artificial oesophagus by irtestinal anastomosis under the skin of the chest, connecting the stomach with the beginning of the tube. One of these cases was a much emaciated child.

Deutsche Med. Woch. November 26, 1914, XL, No. 48.

*1. Acute Injury of the Oesophagus. J. Graber.

*1. Graber's paper is an appeal for the skilful, careful use of the endoscope. For temporizing with painful affections of the tube he prescribes the sipping of a weak cocain solution or a dose of 20 drops of 1 per cent. morphine solution. He cites cases of the rapid healing of oesophageal wounds as brought out in military experience. Diverticulitis and the symptoms from the presence of a diverticula he has relieved by the use of an emetic routinely.

Berliner Klin. Woch. November 30, 1914, LI, No. 48.

*1. Nosebleed in children. A. Petry.

*1. Petry cites cases of the common nosebleeds with the infectious fevers and emphasizes the importance of careful examination of the nares for the bleeding spot. Hemorrhage should not be ascribed to sepsis in general until the nasal causes can be excluded.

Archives of Internal Medicine. December, 1914.

1. Physiology of the Otic Labyrinth. J. G. Wilson and F. H. Pike.

New York Medical Journal. January 2, 1915.

1. Healed Tuberculosis of Tongue, Larynx and Lungs. F. M. Pottinger.

2. Primary Nasal Diphtheria. H. A. Schatz.

Annals of Otology, Rhinology and Laryngology. September, 1914.

1. Results of Operation (Laryngofissure) for Intrinsic Cancer of Larynx. E. Schmiegelow.

2. Tuberculosis of Middle Ear. H. H. Briggs.

3. Aural Complications in Typhoid. E. M. Holmes.

4. Cauterization of Mucous Membranes, Particularly of Nasal Mucosa—Protest. E. deW. Wales.

5. Case of Suppurative Thyroiditis with Perforation of Trachea. 2. Unusual Infection of Epiglottis and Larynx in Child—Tracheotomy—Recovery. C. F. Theisen.

6. Importance of Disturbed Metabolism in Etiology of Secretory Middle Ear Conditions. J. E. Sheppard.

7. Case of Chronic Meningitis Possibly of Otitic Origin. J. J. Thompson.

8. Vaccines in Chronic Ear Infections. Report of Cases. W. H. Haskin.

9. Two Obscure Cases of Resolving Mastoiditis—Operative Indications. H. B. Blackwell.

10. Report on Twenty-six Cases of Tonsillectomy, Two and a Half Years After Operation. A. Lewy.

11. Double Radical Mastoidectomy in Dementia Praecox with Phenomenal Improvement in Mental and Physical Conditions. G. E. Davis.

12. Furunculosis of Ear with Treatment by Vaccines. H. B. Brown.

13. Labyrinthine Studies. J. A. Babbitt.

14. Pemphigus Involving Primarily Mouth and Throat. Report of Cases. R. Sonnenschein.

Jour. Amer. Med. Assoc. January 2, 1915.

Tumors of the Jaw. R. H. Ivy.

1. Epulic tumors may be classified as hard or fibrous, and soft or giant-celled.

2. The giant-celled tumors of the jawbones fall into two distinct classes, (a) the ordinary so-called giant cell or myeloid sarcoma; (b) the giant cell endothelioma.

3. The myeloid sarcoma are benign and require only local removal of the new growth itself as in the case of other benign tumors.

4. The endothelioma belong to the malignant group and should be treated accordingly.

It is interesting to note that the benign course of many of these "epulis," mesothelial tumors of the jaw, contradicts their undoubted sarcomatous appearance on histological section.

Jour. Amer. Med. Assoc. January 9, 1915.

2. The Relation of the Rhinopharynx to the Middle Ear and Mastoid. E. L. Jones.

3. The Origin of Labyrinthine Rest-Tone. E. P. Fowler.

Jour. Amer. Med. Assoc. January 30, 1915.

1. Endamebic Pyorrhea and Its Complications. A Preliminary Note. J. S. Evans and W. S. Middleton.

2. Breakage and Removal of Eustachian Applicator. E. W. Stimson.

Indiana State Med. Assoc. Jour. December, 1914.

1. Practical Considerations of Modern Ideas in Oto-laryngology. J. D. Heitger.

Iowa State Med. Soc. Jour. December, 1914.

1. Significance of Laryngeal Manifestations During Course of Pulmonary Tuberculosis Based on a Study of Six Hundred and Fifty Cases. R. Levy.

2. Tonsils and Adenoids in Their Relation to General Systemic Infections. H. B. Gratiot.

3. Sinus Infections. W. W. Pearson.

Missouri State Med. Assoc. Jour. December, 1914.

1. Production of Immunity by Tonsils and Adenoids in Children. J. Zahorsky.

2. Exudative Middle Ear Catarrh. G. D. Kelly, Jr.

Surgery, Gynecology and Obstet. December, 1914.

Some Considerations that Determine Extent of an Operation in Septic Invasion of the Lateral Sinus. H. E. Jones.

Glasgow Medical Journal. December, 1914.

Œsophagotomy for Removal of Tooth-plate. W. Downie.

Douglas Macfarlan.

Homoeopathic Recorder. February, 1915.

*7. More About Platanus occidentalis in Styes.

Dr. Chas. H. Hubbard writes in response to many communications which have come to him from near and far. The remedy must be continued patiently and persistently for at least several months, and not be alternated or combined with other medication; it should be continued several months, one dose a day, after all evidences of chalazia have disappeared, even where the knife has been advantageously used.

J. L. M.

The title of Dr. Hubbard's paper refers to styes and the paper makes reference to chalazia. Which does he mean?—Ed.

Medical Review of Reviews. February, 1915.

*15. Fresh Air School Rooms—the Problem Solved. John B. Todd.

In consequence of the experiment cited in this paper the Summer School in Syracuse, a sixteen-room building with a registration of nearly 750, is completely equipped, is overcrowded, but the air is maintained pure and free from odors without using the fan. Principal, teachers and janitor are all enthusiastic over the improved air conditions. (*Scientific American* Supplement, Feb. 21, 1914, shows detail in working drawings.)

The lower sash opening of each window is filled with a wooden screen covered with the lightest grade of unbleached cotton cloth. Before school opens in the morning the janitor closes the windows and warms the room to 70° by hot air from the fan; this is humidified by a steam jet in the mixing room. When school opens the windows are raised and the hot air inlet closed. The screens admit fresh air of very low velocity from a large surface with no heat loss from conduction; glass transmits twenty times more heat than cotton. The janitor says the room has been warmed as easily as it was before the screens were used. All winter the windows have been open and children sit within five feet of the windows; there are no draughts, the velocity of the warm air rising from the radiator is greater than

that of the cold air which is being slowly diffused through the screens, hence the resulting air current is upward. With zero outside, at 10 a. m. on the coldest day of the winter the room temperature was 70° with every window in the room open—fifty square feet of screen. The old stuffiness and odor entirely disappeared under this system, as did all the snuffling and coughing of the pupils; no more cases of fainting occurred, conplaints of headaches ceased and the pupils have done better work.

This is a supplemental system, not antagonistic heating. All screened windows should have radiators between window and floor. Screens exposed to strong winds should have heavier cloth, to keep the incurrent of air at low velocity. After use for a time the cloth becomes much discolored and dirty from outdoor dust; then it should be cleaned or renewed. The screens cost from seventy-five cents to a dollar each, painted two coats to match window frame and fitted in place.

For two years Dr. Todd has been using a sleeping porch thus screened; it was very comfortable through severe weather, its temperature being from 15 to 36° degrees warmer than outside, according to the direction and velocity of the wind. J. L. M.

Amer. Jour. of Roentgenology. September (1914), I, No. 11.

Diseases of the Accessory Sinuses. A. W. George.

Arkansas State Med. Jour. XI, No. 7.

Early Recognition of Diseased Tonsils and Adenoids. W. T. McCurry.

Illinois Med. Jour. November, 1914, XXVI, No. 5.

1. Inheritance with Reference to Eye and Ear. J. C. Fisher.
2. Tonsil Removal by Knife Dissection. O. T. Freer.
3. Function of Faucial Tonsils and Indications for Their Removal. C. F. Burkhardt.
4. Topography of the Larynx. J. A. Cavanaugh.
5. Recognition of Chronically Infected Faucial Tonsils. G. E. Shambaugh.

Laryngoscope. November, 1914, XXIV, No. 11.

1. Preturbinal Operation on Maxillary Sinus. R. H. Skillern.

2. Extracts and Thoughts from (a) Sinus Classic. J. J. Hurley.
3. Relation of Tonsil to Thyroid Disease. B. R. Shurley.
4. Suspension Laryngoscopy in Children. R. Levy.
5. Routine Use of Bronchoscope in Outpatient Department. R. T. Ridpath.
6. Environmental Surgery of Otolaryngology. J. F. Barnhill.
7. Hyoscin and Morphin as Preliminary to Local Anaesthesia. L. M. Hurd.

Monatsschrift fur Kinderheilkunde. XIII, No. 4.

Treatment of Stenosis of the Larynx in Childhood. G. Siewczynski.

Zeitschrift fur Kind. August, 1914, XI, No. 5-6.

Meningitis as a Complication of Diphtheria. F. Reiche.

Gazetta d. Osp. e d. Cl., Milan. November, 1914, XXXV, No. 123.

Malaria with Laryngeal Disturbances. G. Cremonese.

Postdiphtheritic Polyneuritis. A. Carafoli.

Polyclinico, Rome. XXI, No. 11.

Roentgenography of Sella Turcica in Relation to Disease of the Pituitary Body. S. Coleschi.

Medical Record. December 5, 1914, LXXXVI, No. 23, 24.

1. New Combination Head Mirror and Head Protector. M. Unger.
2. Two cases of Retropharyngeal Abscess. B. A. Fedde.

N. Y. Med. Jour. December 12, 1914, C, No. 24.

Colon Bacillus Infection in Middle Ear Disease. D. S. Dougherty.

Texas State Jour. Med. November, 1914, X, No. 7.

1. Case of Lateral Sinus Thrombosis. W. D. Jones.
2. Bronchoscopy with Tracheotomy. R. H. T. Mann.

Practitioner, London. December, 1915, XCIII, No. 6.

Lung Affections in Influenza. D. T. Richards.

Douglas Macfarlan.

ABSTRACT

Examination and Treatment of Riggs' Disease (*New Orleans Med. and Surg. Journ.,* November, 1914). The amebae are most numerous at the bottom of the lesion. Remove a little material (a good

toothpick serves well), dilute on a slide with a little salt solution, saliva (patient's) or water, examine promptly, through a cover glass, with the high dry lens of the ordinary microscope. Careful search will reveal the amebae, showing the characteristic motion and varying in size from that of a leucocyte to three or four times larger. There is no contractive vacuole, but nutritive particles are observed more refractive and more prominent. The ectosarc is quite clear and well differentiated from the endosarc. To stain, pathogenicity by their inclusions of tissue or cell remains: Make a thin spread of the scrapings and pus from the bottom of the lesion on a slide, allow to air dry, fix with heat and stain with carbol-fuchsin about one-fourth minute, wash, stain with Loeffler's methylene blue about one-half minute, wash, dry and examine. Bass and Johns have been unable to demonstrate that these amebae take up bacteria, though they sometimes appear to do so.

Whenever a patient has advanced Riggs' disease in one or more teeth the disease also exists around and between many of the other teeth and careful examination will demonstrate the presence of active motile amebae.

But one dose a day—one-half to one grain—of emetine was given; several cases had a daily dose for several days; others were given one or more doses until the amebae disappeared and results were watched for. In no case were amebae found the next day after the emetine had been given on three successive days. The chances of reinfection are so great and the damaged gum, alveolar and tooth structure offer such favorable soil that the authors think it necessary to continue the specific treatment until nature has had time to fully heal the disease; if the bone is not involved the gum will probably heal in a week or less.

Be careful not to give emetine any longer than absolutely necessary, lest undesirable pathogenic symptoms be evolved.—*Med. Rev. of Rev.*, February. J. L. M.

NEWS ITEMS

Notes From Denver

A goodly number of the homoeopathic physicians of Denver have been conducting a Medical Study Club for the past two years, which has proven a very profitable movement. Dr. J. P. Willard, their chairman, has been instrumental in securing specialists in various lines to give courses in their specialties, and much interest has been manifested in the work.

Former Honorary President of the A. I. H., Dr. N. G. Burnham, who has been in practice since 1852, is still engaged in active practice as vigorously as the average man many years his junior, and takes a lively interest in matters medical, as well as in all civic affairs. May he live long to be with us.

The management of the Park Avenue Hospital (homoeopathic) are congratulating themselves upon the fact that the hospital has nearly unburdened itself of the heavy debt it has been carrying for the past twenty years, and there is a prospect that the hospital will be materially enlarged in the near future. Its present capacity is inadequate to meet the demands and patients are being turned away almost daily.

Dr. D. A. Strickler, chairman of the Colorado State Board of Examiners, advises that he is devoting much of his time to wrestling with legislative matters, especially with reference to those requiring the osteopathic profession to establish some standard of education and requirements as a basis of admission to practice in the state that evidences at least a reasonable training along medical educational lines. At present about the only requirement under the law is a three months' correspondence course, or its equivalent, to permit a candidate to hang out his shingle as Dr. John Doe, Osteopath. The majority of the osteopathic men of recognized standing are in accord with the proposed reform, but it seems to threaten a disruption of the iron-clad State Osteopathic Association.

Many of the local profession are planning to attend the meeting of the Institute at Chicago in June.

Dr. Dean W. Myers, of Ann Arbor, and Drs. Gilbert Fitz-Patrick, A. H. Waterman and Burton Haseltine, of Chicago, spent the first two weeks of March with Dr. J. B. Griffin at St. Augustine, Fla.

Among those present at the recent meeting of the College Alliance were Drs. Dewey, Beebe and Maylor, of Ann Arbor; Drs. McCann, Burrett, Grovenor and Junkerman, of Ohio; Drs. Fuller and Stewart, of Pennsylvania; Drs. Copeland and Stewart, of New York; Dr. Strickler, of Colorado; Dr. Royal, of Iowa, and Dr. Foster, of Missouri.

The College Alliance of the American Institute of Homeopathy tabled a resolution recommending to the American Institute that it require a pre-medical year after the high school diploma.

Dr. Willard Thompson, of Sandwich, who has recently taken up the specialty of eye, ear, nose and throat, has been spending the past few weeks in Philadelphia visiting the clinics of Drs. MacKenzie, Nagle, Palen and Goddard. Dr. Thompson has returned to Chicago, where he will spend some months in further preparation.

Dr. Hill, of Watertown, S. D., and Dr. Putnam, of Sioux Falls, Iowa, were in Chicago during February visiting the various eye, ear, nose and throat clinics.

Dr. George H. Schlesselmann, who has been in charge of his brother's practice at Good Thunder, Minn., for the past two months, passed through Chicago recently. He expects to locate in Northern Wisconsin.

Dr. Brunk, who is in charge of the Mennonite Sanitarium at La Junta, Col., spent two weeks of his vacation in Chicago.

Dr. O. E. Glick, of Metcalf, Ill., has accepted the position of graduate interne at Hahnemann Hospital, Chicago.

Dr. F. M. Dondanville, of Dwight, Ill., is devoting some time to laboratory work at Hahnemann Hospital, Chicago.

NEWS ITEMS

Dr. Gilbert J. Palen and Dr. George W. Mackenzie, of Philadelphia, have been visiting several of the clinics in the West, especially those at Chicago and Rochester, and incidentally attended a meeting of the Journal Club on the 19th and 20th of March.

Dr. Rufus B. Weaver, "The grand old man of Hahnemann," Philadelphia, completed fifty years of service as a teacher of anatomy. He was presented with fifty large American Beauty roses from the faculty and a beautiful loving cup from the student body.

Plans are under way for a post-graduate course at Hahnemann College of Philadelphia in Eye, Ear, Nose and Throat work. It is hoped that the proper arrangements can be made so that a diploma or certificate will be issued at the completion of the course.

Drs. McCleary, Haseltine and Myers were among those who took the recent Florida State Board examination. They are reported to have passed with good grades. After the examination they spent a few days as guests of Dr. J. Burnie Griffin at St. Augustine.

Dr. George W. Mackenzie has started a new class in nose, throat and ear work and work upon the labyrinth. The anatomy, physiology, pathology and operations are gone over very carefully. Associated with Dr. Mackenzie is Dr. Frank O. Nagle, who gives a course in ophthalmology.

The Alpha Sigma Convention in Philadelphia was attended by several New York men. McCleary, of Cincinnati, was elected Grand President.

Dr. Bennett, formerly associated with Dr. Haseltine in Chicago, is in New York doing special post-graduate work on the ear. Dr. Bennett recently visited Dr. G. DeWayne Hallett at his clinic in the New York Ophthalmic Hospital.

News Items

The Indianapolis Eye, Ear, Nose and Throat Hospital was incorporated under the laws of the State of Indiana on December 31, 1914. It will be under the control of a Board of Directors, five in number, elected annually. The directors will employ a specialist and he will be given the general supervision and do the surgery for the hospital cases. Private cases will be permitted to have any qualified surgeon. While seeking a suitable permanent location, temporary work will be done at 1102 Sterling Street. Dr. A. A. Eikenberry has been elected the first "Surgeon-in-Charge." A free ward will be maintained by private donations and a free clinic will be held one day of each week.

St. Luke's Hospital has united with the Hahnemann General Hospital, owing to the building of the Eastwick Motor Company next door completely closing six of the best rooms, facing the west, at St. Luke's Hospital. It is hoped that the outgrowth of the union of these two hospitals will be an up-to-date homoeopathic hospital for Baltimore.

The Baltimore Homoeopathic Medical and Surgical Club was delightfully entertained by Dr. J. Ward Wisner at his residence on Wednesday, February 17th. This club has been in existence for fifteen years, increasing each year in its enthusiasm and good fellowship.

Dr. E. H. Linnell, of Norwich, Conn., has removed to the new Thayer Block, corner Franklin and Bath Streets.

Cincinnati has recently dedicated her new city hospital. This hospital is probably the finest and largest municipal hospital in the world and the Cincinnatians are duly proud.

On March 1st and 2nd the American Laryngological, Rhinological and Otological Society (Middle and Western Sections) was in session in Cincinnati. The meeting was apparently well attended and many good papers were read.

THE JOURNAL OF OPHTHALMOLOGY OTOLOGY AND LARYNGOLOGY

CINCINNATI, OHIO

Editor: DR. G. W. MACKENZIE

Associate Editor for May, DR. PHILIP RICE

CONTENTS FOR MAY, 1915

EDITORIALS

Page

What the Mother of a Deaf Child Ought to Know 375
Our Fruitless Efforts 376
Had We Not Better Stop and Consider? 378
Hypophoria and Other Heterophoria Suggestions 380
Announcement 381
A Correction 381

ORIGINAL CONTRIBUTIONS

My Friend the Specialist. By the Rev. C. F. Aked, D.D., LL.D. 383
Materia Medica and Special Practice. By W. J. Hawkes, M. D. 388
General Systemic Disturbances and Catarrhal Conditions of the Nose and Throat. By E. Weldon Young, M. D. 394
There is Good Even in Hurtful Things. By Samuel Hahnemann, M. D. 398
The Importance of Correcting Visual Defects in Children. By Lewis C. Wessels, M. D. 400
Epilepsy and Eyestrain. By E. H. Linnell, M. D. 409
An Improved Eye Spud. By Henry W. Champlin, M. D. 418
Foreign Bodies in the External Auditory Canal. By Joseph V. F. Clay, M. D. 419
A Case of Bilateral Auditory Neuritis Due to Poisoning by Illuminating Gas. By Joseph V. F. Clay, M. D. 424
The Prevention of Deafness. By Lloyd H. Clark, M. D. 426
Medical Licensure. By W. J. Blackburn, M. D. 430
The Relationship of Dental Pathology to Eye, Ear, Nose and Throat Conditions. By George W. Mackenzie, M. D. 434
CURRENT LITERATURE (Index of Titles 439
ABSTRACTS 446

SOCIETIES

Announcement of the Annual Meeting of the O. O. and L. Society .. 451
Titles of Papers to be Read 452
Pre-Sessional Abstracts 453

CORRESPONDENCE

An Open Letter to the Editor 456
BOOK REVIEWS 458
NEWS ITEMS 463

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The Journal of Ophthalmology Otology and Laryngology

Vol. XXI. MAY, 1915. No. 5.

EDITORIAL

WHAT THE MOTHER OF A DEAF CHILD OUGHT TO KNOW

This is the title of a book recently sent to the Journal for review. The author is John Dutton Wright, founder and principal of the Wright Oral School for the Deaf. He is also director of the American Association to promote the teaching of speech to the deaf, and author of works on this subject.

The subject of this last work of Dr. Wright is so important, his treatment of it is so clear and concise and his arguments so convincing that it deserves more than the passing notice usually given to the reviewing of books. The Journal, therefore, has seen fit to draw attention to the subject and review the book in its editorial columns.

From the standpoint of experience no one is more competent to present this subject than Dr. Wright. His appeal to the mother of the afflicted child is full of encouragement. He encourages the natural love of the mother for her child, but at the same time points out the danger of misdirected love which is calculated to do the child harm.

In the preface is a letter written by Lucile M. Moore, the mother of a deaf child, which is well worth reading. We as otologists are too prone to look upon the problem of deafness as one of intense interest from the scientific viewpoint. We are anxious to get results for the personal gratification which usually accompanies victory. In those unfortunate cases where victory is not ours we often dismiss the case as incurable without further consideration. Although we

may have done everything that could have been done to restore hearing we have not done everything that might have been done for our patient's future welfare. Looking backward, many of us will recall instances where we have committed this sin of omission. Let us resolve not to do so again.

Dr. Wright says: "Even though the child be totally deaf from birth he can nevertheless be taught to speak and to understand when others speak to him. He can be given the same education that he would be capable of mastering if he could hear. The mother need not be despairing nor heart-broken. A prompt, brave and intelligent facing of the situation will result in making the child one to be proud of and to lean upon." If this is true it is encouraging and parents should be taught to know it.

The book is divided into twenty-seven chapters that take up in their turn the various problems which confront the mother from the time she first learns the fact that the child is deaf until he is ready for school. It is written in a style easily comprehended by the layman. It is free of technical terms that would strain the attention of the mother in reading it, and yet it is so intensely interesting and educational that it is well worth reading by the otologist.

When the mother is first made aware of the fact that her dear one is afflicted with incurable deafness the shock must be dreadful. What greater service can we perform at such a time to ameliorate the mother's anguish than to point out that the affliction need not be so great as she at first thought? We may go so far as to read the preface of this valuable little book to her, laying particular stress upon the last paragraph (quoted above), and finally, to make sure of her possessing the book, make her a present of it.

The book is published by the Frederick A. Stokes Company, New York. Cloth. 16 mo. Seventy-five cents.—G. W. M.

OUR FRUITLESS EFFORTS

If one will follow the course of any one of the many theories concerning disease and its cure in our magazine literature from month to month he will observe one invariable thing; namely, a feeling of absolute certainty in the theory and lively enthusiasm for it when launched, with a gradual but certain dwindling in both the moment a very extensive application is made of it in practice. This could be

illustrated with innumerable examples, of which salvarsan and serum therapy are probably the most conspicuous. Both of these theories have undergone radical changes since the day they were first presented to the profession. Salvarsan practically received its death blow the first year. It was modified almost at once, neosalvarsan taking its place.

A few months ago an editorial writer in one of our leading old school journals had this to say regarding serum and vaccine therapy in septicemia: "The careful student of current literature concerning serum and bacteria therapy will be struck by the fact that periods of enthusiasm have been followed by those of skepticism and neglect; that many reports as to beneficial effects have been far from convincing; that the fundamentally sound sense of the medical profession still relegates the treatment to the class which may be regarded as promising but not yet proven; that the doctrine as to the inefficiency, nay, the danger, of the treatment during acute periods of infection is generally accepted, with some notable exceptions, etc."

Something like a year ago Professor Zeisler, of the Northwestern Medical School, Chicago, in a strong article condemned the vaccine treatment of acnea as a rank failure.

Other instances might be mentioned showing a similar experience.

The literature that has resulted from a discussion of these many schemes when looked at in the aggregate has a rich and imposing appearance; but when viewed critically and in detail it presents a very different picture. The burden of the literature of our times is almost wholly that of experimentation and specialization. We try first one thing, then another. We shift from one foot to the other, all the while standing still; and often one feels like crying aloud, as did the prophet of old, "How long, Oh, Lord, how long!"

Besides the problem of the cause and cure of disease we have another quite as perplexing; namely, the cause of our inability to strike the right trail. Why are our efforts, which goodness knows are strenuous enough, so fruitless? Why do our conclusions, drawn from the most careful investigations, fail us when put to the test in practice? The salvarsan theory was worked out by a man whose ability and integrity no man can question, and why did it prove so valueless in the hands of physicians generally?

The answer to these and many similar questions lies in this: *In our efforts to gain an understanding of disease we have overlooked the*

individual who has the disease. Hence, when we apply in general practice in a variety of individuals an idea or theory worked out in the laboratory, and tested out on a few and selected individuals, we fail.

We are willing to admit that the salvarsan treatment on the basis on which it was selected was satisfactory in six hundred and six persons; but in how many was it a failure? It failed in some, that is admitted, and this fact alone is sufficient to prove that it cannot be made a universal proposition and universally applied.

In this experience we exhibit one of our worst faults. The moment we successfully demonstrate a theory in one individual case, that moment the idea begins to take root that we have discovered a universal proposition, and after the second or third demonstration, and we are fully determined that there is a second and a third, we are thoroughly satisfied of the fact, and are ready to blaze forth to the world the discovery of a panacea for all similarly afflicted. If the thing is backed up by some "authority," then a universal application is made of it at once, and every effort made to substantiate all claims made for it.

But we fail, and we know we are constantly failing when we do this, and it is in most instances only a short while when universal condemnation is heaped upon the theory, though there may be much of real merit in it.

Now what lies back of all this foolish practice is the age-old, nonsensical and untenable notion of a specific cause for every disease and a specific cure; and which, though exploded ten thousand times, is still held with bulldog tenacity by not only the rank and file in the profession but by our leaders as well. *Individuality*, and all that goes to make the individual; *i. e.*, all that goes to make him different from every other individual in organization, in function, in predisposition, in susceptibility, and in everything else is a matter of little value apparently when compared wth this conviction of a specific. This fallacy is undoubtedly our undoing in many of our investigations and theories.—P. R.

HAD WE NOT BETTER STOP AND CONSIDER?

The protest against the increase of State control over the individual, though more or less vigorous and persistent for a generation and more, and voiced by some of the leading thinkers of the time, seems to have had little influence in arresting the progress of legislation in

this direction. The State in spite of it has constantly extended its authority over the individual. There is scarcely anything left over which he may exercise full authority, though it may be a matter which concerns himself solely.

His wages, his property, his body, his mind are all more or less controlled and directed for him; and the activities of the eugenists indicate that ere long the affairs of his heart will likewise be supervised for him. All signs point to an increasing paternalism on the part of the State.

Now it is no longer a question of whether the State ought, in some measure at least, to control the affairs of individuals. This has been settled. But there is a very great question about how far she should go, or can safely go in that direction. There is a limit to a people's endurance. State control means discipline, and discipline is a thing not many relish, especially when it is founded upon a presumed necessity and enforced in a wholesale manner.

It is perfectly true that this is a government by the people; and hence it may be said that the mandates are the mandates of the people. But this is true theoretically only. We know perfectly well that mighty little legislation is actually instituted by the people, and even less controlled by them. We know perfectly well that special interests are behind practically every statute ever put upon the records. Not infrequently have the people been able to forestall pernicious legislation, but rarely able to enact any which special interests were not willing should be enacted. This is particularly true with regard to health legislation. Few, if any, enactments show the grasping hand of selfish interests more glaringly than do those pertaining to prophylactic medicine and the control of infectious diseases. Nothing could possibly be more raw than some of the regulations which have been inflicted upon a long-suffering public by those in authority. "Individual liberty" is a phrase they have entirely eliminated from their vocabulary. And the limits to which they are not willing to go have not been reached, nor is there even a glimmer of dawning of the limit. Not only are they willing to intellectually pauperize a whole nation, but willing and ready to starve a distracted and pauperized community. Is this an exaggerated statement—even wild? By no means. Throughout the land the rule prevails: "No vaccination, no education."

A little over a year ago during the floods along the Ohio and Mississippi Rivers the government health authorities had posted on

relief boats and in other conspicuous places on large placards this notice: "No Vaccination, No Rations."

The viciousness of such a ruling has not yet fully dawned upon the public. When it does, look out for a ruling from an indignant and outraged people. And the public is gradually and very generally becoming suspicious; coming to realize from the perpetual changing of theories and modes of practice of medical men that too much reliance cannot be placed in them; that they are not wholly to be trusted.

For the State to prevent a boy or a girl from going to the common school, and the young man and young woman from attending the higher institutions of learning because they have not been vaccinated; or to penalize a general public if they refuse to submit to an arbitrary ruling on the part of some individuals who have, in truth, proven their incompetence by their uncertain and constantly shifting therapeutic methods, is to lay up trouble for the future. The question, whether a boy is a greater menace to the community in school unvaccinated or on the streets developing vicious instincts unvaccinated, is one that needs more careful consideration than it has hitherto received.

The merits of vaccination we are not now considering. That is for the moment neither here nor there. The question we are trying to discuss is: Will the ever-extending authority of the State be met by an ever-increasing spirit of obedience on the part of her citizens; or, is there a danger of extending this authority to a point where obedience ceases, where submission and restraint become rebellion and where authority is met by revolt?

In no sphere of life today is the medical profession so securely enthroned that it can afford to throw discretion to the wind and force any matter to the limit. To use a slang phrase, "the public will not stand for it;" at least not until medicine is established on a firmer basis scientifically.—P. R.

HYPOPHORIA AND OTHER HETEROPHORIA SUGGESTIONS

"The straightforward, sincere, honest man looks you straight in the eye while talking; beware of the shifty-eyed man." True, but may it not be a heterophoria, persisting since early childhood, that makes it difficult for one to hold his eyes constantly fixed upon yours?

May not heterophoria, in and from childhood, be sometimes a contributing cause of aprosexia, discursive ideas and even rambling talk?

Suspect exophoria where you see vertical lines over the glabella, and hypophoria in the man with a horizontally lined forehead.

Examine for hyperphoria those who are afraid to stand at the edge of a precipitous height—who fear falling, become dizzy or are seized with an impulse to jump off.

Correction of a cyclophoria may be requisite for the cure of a habit scoliosis or of a functional wry neck. And, conversely, it may be necessary to equalize the length of the legs in order to maintain the cure of a cyclophoria.

Cyclophoria often goes undiagnosed. It is quickly and easily detected by looking at a straight line through a double prism.

Let us say and write *hypophoria* when the weakness is of the elevating muscles of the eye.

In the (not so rare?) cases of "heaviness of the eyes" without weakness of the elevators of the lids, when the power of each superior rectus tests below normal, why not diagnose "double hypophoria"?

Ophthalmology is no longer satisfied to ascertain that one eye tends to point higher or lower than its fellow and to call it hyperphoria in either event. It is a (right) hypophoria if strengthening the (right) superior rectus, or wearing a vertical prism before the (right) eye, is the proper treatment. Would it not be more scientific and conducive to more accurate examination and treatment if every one would limit the term "hyperphoria" to a relative weakness of the deorsumvergens muscles?

J. L. M.

ANNOUNCEMENT

We are pleased to announce that the June number of the Journal has been turned over to the College of the New York Ophthalmic Hospital and that Dr. Charles Deady, Dean, will act as associate editor. All original articles will be contributed by men on the teaching staff of the institution. The services of Dr. Deady as associate editor at this time will be no less appreciated than when he served as editor of the Journal from 1891 to 1901.

A CORRECTION

The editor wishes to correct an error which occurred in Dr.

James A. Campbell's article in the April issue of the Journal on "Blindness from Brain Tumor."

Through some oversight the final paragraphs of this article were omitted in the last printing, making the article quite incomplete. We regret that such an error should have occurred, and in justice to Dr. Campbell the omitted paragraphs are printed below:

BLINDNESS FROM BRAIN TUMOR

A surgeon made a decompression operation in right parietal region with slight relief of the internal pressure, a brain hernia following. The rapid progress of the disease foretold an early death. She died nine days after I saw her. A post-mortem was made, at which I was present. A tumor the size of a small hen's egg was found in the substance of the lower part of the left occipito-parietal lobe of the cerebrum and a yellow, grumous, gelatinous fluid was found in the cerebellar fossa, evidently the result of inflammatory action. There was not the slightest evidence of any disease of the bones of the right ear or in the contiguous parts of the brain. Therefore it was not an otic abscess from the former ear trouble.

A report of the examination of the tumor was recently sent to me by the attending physician who reports that it was a glioma.

It will be remembered that while optic neuritis may in many cases be present without brain tumor, yet over eighty per cent. of brain tumor cases will have optic neuritis.

MY FRIEND THE SPECIALIST

The Rev. C. F. Aked, D. D., LL.D.,

San Francisco, Cal.

I HAVE been wondering what miracle of grace induced the Associate Editor of the O. O. and L. Journal to admit to his sane and serious pages the "trivial fond records" of my dealings with the specialist. Dr. Rice can hardly hold me capable of writing a humorous article. He knows me too well. It is notorious that the physician professes to enjoy a joke directed against himself, and it may be the original sin of my British birth and breeding which is responsible; but for my life I cannot see the humor supposed to reside in the conventional doctor-story. Like Kipling's Satan, "I see no worth in such hobnailed mirth." Rather, I am inclined to marvel that physicians are able to conceal the contempt they must feel for such puerilities. One of them, amongst the most ancient known to the average reader, had the good sense to suppress the reflection cast upon his profession by a contemporary author. Two New Testament writers tell the story of the healing by our Lord of the woman afflicted by "an issue of blood." St. Mark makes a statement which St. Luke, having St. Mark's Gospel before him, deems it his duty to ignore. Here the editor must grant the use of parallel columns.

Mark V: 25-27.

And a woman, who had an issue of blood twelve years, and had suffered many things of many physicians, and had spent all that she had, and was nothing bettered, *but rather grew worse*, having heard the things concerning Jesus, came in the crowd behind, and touched His garment.

Luke VIII:43, 44.

And a woman, having an issue of blood twelve years, who had spent all her living upon physicians, and could not be healed of any, came behind Him, and touched the border of His garment.

Clearly, in the view of St. Luke, the testimony of St. Mark that the woman had spent all her money on doctors who had left her worse than they found her was incompetent, immaterial and irrelevant. And St. Luke was a doctor himself! *Ὁ ἰατρὸς ὁ ἀγαπητὸς* is the Apostle Paul's tender phrase concerning Luke—"the beloved physician."

And I can write of the specialist in no other spirit. It has been my

ill fortune more than once to stand in sore need of his services. It has been my great good fortune to be served and saved by men whose very presence was a benediction. I have no reason for assuming that on each occasion—now in Europe, now in America—I fell into the hands of absolutely the best man living upon the face of the earth, that there never has been anyone as lucky as I and never specialist so skillful and kind as those I know. It would be unreasonable to suppose anything of the sort. It is more than likely that there is as good fish in the sea as ever came out of it—and specialists all over the earth like the men I know.

When I read that the sin of the specialist is to see all life through his specialist's eyes, to find the disease it is his business to cure where it does not exist, and to inflict untold evils upon suffering men and women by reason of his own specialized form of crankiness, I can but throw up my hands in amazement and and demand, Where are these specialists to be found? For I have never come across one of the breed. I owe my hearing to one specialist—perhaps my life also—and certainly I owe my life to another. To the specialist-editor of this issue of the O. O. and L. Journal I owe—but perhaps if I tell all that his love and care have done for me he will not dare to print my words.

I never cease to marvel at the knowledge of the specialist, his mastery of his business. To be sure it ought to be so. But how many things that ought to be are not there when you look for them! A preacher, for instance, who can't preach is like a rat-catcher who can't catch rats—and what is the good of him? Yet there are preachers—at least, there are said to be preachers—who—who; well, anyway, we are not all Beechers. But the specialist! I suppose there are specialists who are not specialists at all, but just humbugs, only I have never happened to come across them. And the supreme skill of those I know, their poise and assurance and command—they have not specialized for nothing.

Here is a story:

I was sick in an hotel on the French Riviera. I was down with tuberculosis, though at first I did not know it. I thought it was a "cold," perhaps "congestion of the lungs." My wife found one of the physicians resident there having a practice amongst the English colony. He was a general practitioner. He did the best he could.

No man can do more. But what a best! He told me that I should never be able to live in a city again; he said that I should never preach or do any manner of public speaking. He advised me to go to South Africa and live on a farm. It was worse than a sentence of death.

But I decided not to die like a rat in a hole. Sir Henry Lunn, M. D., is a dear friend of mine. He has made a fortune as a tourist agent, rivalling Cook, but he attained fame as a medical missionary. I knew that as a tourist agent he was familiar with the four corners of this old earth; as a physician he knew what should be done for a "lunger;" and I knew that I could trust his friendship. I prevailed upon my wife to write and ask him for his advice. Promptly it came: "Clear out of the Riviera. Go to Davos Platz, Switzerland." I went in spite of tears and prayers and protestations that I should die on the way. I said that I might just as well die in a railway train as in an hotel. It took me seven days to make a twenty-four hours' journey. I found my way to the Sanatorium Schatzalp, a thousand feet above the little town of Davos. And I found salvation.

The great man—one of the world's great men—laid his stethoscope on me. I was so weak that, kind as he and his colleagues were, I fainted under their touch. I told him that I was neither a child nor a fool and that I wanted to know the truth. "Shall I recover?" Gravely, with infinite tenderness, he said: "Doctor, you must give me time. You must not press me for an answer. I think you will do well. But give me a month and I promise to tell you the truth."

I was not the only pebble on the beach. It is a big place, is the Sanatorium Schatzalp. Yet it seemed to me that the task of saving me had become the one passion of this specialist's life. In two weeks he said to me cheerfully: "Still waiting for the verdict?" I told him I could wait till the month was up. "No need," he said; "you will be all right." "Do you mean that I shall be cured?" He boggled, as they all do, at the word "cure." He said: "I mean that the disease will be arrested." "But shall I be able to live in an English city?" "Yes." "Shall I be able to go back to my own work?" "Yes." "When?" It was then June, and the answer came: "Next May."

And in May I went home—for the first winter only to half work; my church engaged an assistant for me—and then, well, though I was not to live in a city again nor preach a sermon nor open my mouth in public lest I should tear a lung to pieces, I have held my own for

more than ten years in those South African farms known on the map as Liverpool, New York and San Francisco!

The knowledge of this man, let me repeat, seemed to me then and seems to me now wonderful. One supposes that he must have his failures like the rest of humanity. But to me he always seems exempt, exceptional, abnormal. I have been back to the Schatzalp frequently, sometimes for a winter holiday amongst the snows, sometimes for the pure joy of shaking hands with the great man once more. We have become close friends, intimates. He talks to me about his work. His diagnosis, swift and sure, seems to me uncanny. If he tells me a patient will die, the patient dies. If he says that the patient will recover and puts a date to it, sure enough the patient goes home at the time named sufficiently recovered for all the duties of life. Dear Edward Neumann, with your big heart in your giant's body, shut up in your mountain eyrie in the high Alps, cut off from the world by warring armies massed upon the borders of your Switzerland, believe that out here on the western edge of civilization, on the sun-kissed Pacific Coast, is one grateful patient who will hold you in his heart while life shall last.

And here is another story:

My ear went wrong while I was at the Schatzalp—tuberculosis, of course. I was fully instructed as to the nature of the trouble and as to probable consequences. Well, I was home again in Liverpool and at work. The Lord Mayor gave a reception to Evan Roberts, a Welsh revivalist. We sat drinking tea, the Lord Mayor and Lady Mayoress, the evangelist, and an author of international reputation, John Watson, known everywhere as "Ian Maclaren." And my ear began to pain me! We went from the reception to a public meeting, the Lord Mayor and Lady Mayoress and the revivalist in one carriage, Dr. Watson, Mrs. Watson and myself in another.

And still my ear pained me. We sat on the platform, I next to John Watson. And I said: "Good night; I am going." He demanded what was wrong—the revivalist had not so much as started. I said: "My ear," and bolted. I found a hansom at the door (it was before the day of the taxi). I knew where to find the specialist! The stars in their courses fought on my side. He was at home just finishing dinner. It was Friday night. Until Sunday morning he fought for my life; fought, it seems to me now, like one inspired. My right

ear is not what it should be—but here I am.

Now for the other half of the story and the explanation of my dragging John Watson into it. Some years later Dr. Watson came to this country on a lecture tour. He was out in Iowa, where, after an exciting meeting, he drove home miles through a terribly cold night and went down with a "cold." A local physician was called in. It was "laryngitis" at first; then abscess of the middle ear, that horror which had seized upon me when I sat by his side in the Lord Mayor's parlor. There was no specialist near. By telegraph an ear man was summoned from Chicago. Before he could arrive John Watson was dead. I found my specialist; he did not. Is it strange that no coercion was necessary when our editor asked me to contribute to his symposium on the specialist?

The other day I was allowed to see a world-famous surgeon at work. Really, it was one of the most amazing experiences of my life. That specialist's skill—forever and forever unbelievable—only, we all know that it is there. The surgeon comes with his knife. He pierces, cuts, destroys, and you shudder at his work. Destroys? He is the repairer, the heroic healer; his work is pure beneficence. Somehow I cannot help thinking in this way of death. I find death to be Nature's surgery, the heroic remedy to which she applies herself when her medicines of food and rest and air will not avail. I refuse to start back from death as the one unconquerable thing that beats and breaks us in the end. I cannot admit that death is an enemy, the last enemy that has to be overcome, and no more. I hope to see my Pilot face to face when I have crossed the bar. And I expect in Death himself to find my friend the Specialist.

MATERIA MEDICA AND SPECIAL PRACTICE

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WERE the facts different and had I not been so strongly impressed with the lamentable, and to me unreasonable, tendency of all specialists to neglect and often to belittle the use of homoeopathic remedies in their practice, it might be thought and said that I was presumptuous in writing a paper for the O. O. and L. Journal; and I would not have thought of attempting it had not my good friend, Dr. Rice, requested me to do so. The dereliction before referred to furnishes me both a text and an excuse for writing this paper.

I will not attempt to account for this weaning away of the specialist from the use of the "science of therapeutics." It may be and probably is in great measure due to the growth of the materialistic tendency which inevitably follows the use of the knife, so common and so often necessary in the practice of operative specialists. The attention of specialists is taken up much more with the mechanism and technique of operations than with the constitutional condition and medicinal needs of their patients; and besides, medicinal cures do not bring the emoluments and renown that reward surgical operations. It is not meant by this to intimate that specialists, as such, are more unscrupulous in the quest for fees than the general practitioner. But when we see prominent and successful specialists who before they took up their specialty were good general practitioners, well cognizant of the truth and value of the science of therapeutics and well skilled in its application, deliberately sever all connection with the homoeopathic school, and, for the sake of pelf, power and position, go over, body and breeches (I had almost said "soul") to the old school—well, we have food for speculation. We are sure, at any rate, that principle was not the motive for their action. Nor was it a desire to better serve their patients, because they perfectly well know that the indicated homoeopathic remedy will, better than any other means, help bring the general health up to par; and the better the general health of the subject operated on, other things being equal, the greater the chance for success

of the operation. By "success of the operation" I do not mean the kind where the "operation was successful and the patient survived forty-eight hours."

To a physician worthy the name his patient's recovery is the dominant motive in his conduct as physician. Until his patient is out of danger, all other considerations should be forgotten. The time was, and within my recollection, when such was the rule. I do not mean that there were no exceptions, for there were many; but not so many as there are in the present. The old family doctor thought nothing of riding night and day through mud, slush, snow and rain to answer calls for aid, even though he knew there was small hope for pecuniary reward. He did not, as so many of the "operators" do now, demand his pay, or security therefor, in advance.

I remember once when I was a very busy doctor, driving ten miles at two o'clock in the morning in a "cutter," when the thermometer registered twenty degrees below zero, to see a patient who was desperately ill and who had confidence in me and wanted me. Thought of the fee had no part in my motive when I went. I would have given twice that amount if by so doing I could have been allowed to remain in my warm bed. I needed and wanted the rest and comfort much more than I did the fee. I can freely say that my only motive in that instance was a professional and humane one. That is one instance.

I recall another where the motive, while fully as strong, was not so unselfish. On this occasion I had had a very trying and tiring day, and was awfully tired. Before going to bed I remarked to my then assistant, the lamented Dr. C. E. Laning, that "I wouldn't get up tonight if Queen Victoria herself should send for me." I was in my first sleep, warm and comfortable and oblivious to all professional or other worries, when I was startled by the telephone ringing. Laning knocked on my bedroom door and called out: "Professor, Sarah Bernhardt has fainted on the stage and you are wanted at the Palmer House at once." (This was the "Divine Sarah's" first visit to this country.) My wife afterward said I cast aside all my usual professional deliberation, dignity and decorum, and with one bound landed in the middle of the floor. This wasn't Queen Victoria; this was the only *Sarah Bernhardt!* The Queen wasn't in it.

My enthusiasm and good luck got me to the hotel before the

patient. Now my motive here was neither unselfish nor humane. On the contrary, it was altogether selfish and vain-glorious. And wasn't I excusable? Here was I, a young and obscure doctor, selected from among all the prominent physicians of Chicago, to professionally attend the wonderful and only Sarah Bernhardt! It was enough to inflate any young medico, or, indeed, any *old one*. But I want it distinctly understood that my motive and feelings were neither unselfish nor humane; in fact they were very *human*, especially after I became acquainted with my patient.

I never, before nor since, so much regretted my deplorable ignorance of the French language. I could neither speak nor understand it, nor she English, so we were obliged to depend on her manager to interpret between us. She knew sufficient English, however, when discussing diet, to say, "I no like ze meat, I no like ze bread. I loave ze red peppaire; I loave ze champagne; I loave ze oystaire;" and she about lived on them.

She was a "Simon pure" homoeopath and carried her own medicine case; and the case itself was a curiosity. It contained one hundred and fifty tiny vials, and could be carried without bulging in my inside pocket. Including the cork, one vial was exactly the length of a two-cent postage stamp. To pick one out of the case one had to use a tiny pair of forceps. She gave it to me to fill for her, and I embraced the opportunity to have it duplicated. I have the duplicate yet and prize it highly. Alas! I see by Paris dispatches that the specialists have got her and have cut off her right leg! And probably a good slice of her bank roll!

I assuredly must, and do hereby, apologize to Dr. Rice and the readers of the Journal for this irrelevant digression from the subject of my text. My excuse and justification lie in the fact that I felt so much at sea, and so much beyond my depth in such strange waters; I was, like the other proverbial "drowning man," catching at straws. Besides, if I may judge the readers of the O. O. and L. Journal by myself, it may be a real relief to them to have a change from the monotonous routine regulation papers to which they have long been accustomed.

As I said at the beginning, I have regretfully wondered at the little use made by specialists of "the science of therapeutics." I have actually heard O. O. and L. specialists, old and prominent in the pro-

fession, laugh at the suggestion that homoeopathic medicines might be of use in the treatment of eye and ear ailments. As if these organs were not as accessible to the nerve centers and the blood circulation, and as amenable to their life-giving influences as any other portion of the body. As if diseases of these organs (other than transmatic or surgical) were not caused by wrong constitutional conditions similar to those causing diseased conditions of the other organs of the body, and were not amenable to similar treatment. Local applications only seems to be the rule in the treatment of the eye, ear, nose and throat, notwithstanding the long lists of reliable symptoms of those organs which enrich our materia medica. They seem to have lost sight of the important fact that healing *always* comes from within—never from without; that local applications are useful only as palliatives and as protection from external irritation of whatever kind.

The surgeon—the operator—more, if possible, than any other member of the medical profession, has need of the use of the curative homoeopathic remedy. On the integrity of his patient's general good health depends in paramount degree the best success of his operative work, because the nearer perfect his patient's physical condition the better his chance for recovery. And what more potent means for obtaining that condition than the correct administration of the "science of therapeutics," aided and abetted by intelligent hygienic measures?

I would not be understood as charging all specialists with utterly neglecting to give proper medicinal remedies during the management of their special cases; but I do charge that too many of them do so, the evidence being their own statements when relating their experiences and measures of treatment before medical societies and in written articles. I have heard specialists ridicule the suggestion that the indicated homoeopathic remedy might have been useful as an aid in the cure of the eye or ear case they were treating with local applications only. And this by men prominent in their specialty.

I have myself consulted eye and ear specialists on account of trouble with my eyes, and I do not recollect one instance in which a remedy other than "eye-drops" applied to the eye with a medicine dropper, was prescribed. I have consulted four different specialists for the same trouble, and received what seemed to me exactly the same preparation from each. Another member of my family for another pair of eyes received what surely seemed to be the same eye-

wash, with no suggestion of a homoeopathic remedy.

This state of affairs is all the more remarkable when, as I said before, our Materia Medicas, especially Hering's "Guiding Symptoms," have such a rich list of reliable eye and ear symptoms. And when Norton and Buffum, in their excellent works on the eye, give such clear indications for homoeopathic medicines! Buffum shows clearly that the symptoms and conditions showing constitutional defect are to be the guide in selecting the medicine which will best help cure eye ailments. One reading in Norton's work his list of remedies and their characteristic indications in the treatment of, especially, conjunctivitis and iritis, can but wonder as I do, that all specialists in diseases of the eye should not always avail themselves of their aid. It would be useless and inappropriate in a paper like this even to mention any of the many remedies useful and necessary in the treatment of these cases when the books mentioned give them so clearly and concisely. The double-bar (11) symptoms of Hering's "Guiding Symptoms" are easily found and are always reliable.

The surgeon specialist when he has a fractured bone in a "rickety" child to treat realizes that his patient is defective in bone-forming functions, and knows that the treatment which will best help to correct that defect will to the greatest extent insure best results. If he is a homoeopathic surgeon in the full meaning of the term he will prescribe the constitutional remedy which fits the constitutional symptoms of his patient. That remedy may be *Calc. ost., Calc. phos., Ferrum phos.*, or some other of the so-called bone-making remedies. And he will have better results, other things being equal, than the most skillful surgeon who has no knowledge of these remedies, or who does not use them.

Mention of "bone-making" remedies brings to mind the thought which has often occurred to me regarding the mistaken notion so many physicians have as to the proper function of medicine. They seem to think that medicine is to be regarded, to a certain extent, as food; especially such remedies as *Calcarea phos*, and other bone-making remedies—so-called; and that its use is to furnish *material* in building bony tissue. They seem to lose sight of the fact that their "rickety" patients eat the same food as their brothers and neighbors, the integrity of whose bones is intact. They seem not to understand that the lack is not in the food, but in the physiological mechanism

which converts the food into nourishment and enables it to be appropriated by the tissues. The absurdity of this belief that the administration of the sixth or thirtieth or higher potency of, say *Calc. phos.* in the usual manner, would furnish *building material* for the bones, as bricks and mortar for a wall, must be apparent. The nervous system—the governing power over all animal life—is at fault, and these remedies, like all other medicinal agents, by their dynamic action, correct and set right the functioning of the physiological organs, the duty of which is to make out of ordinary food the necessary material for the normal growth of all the tissues of the body, and enables each organ and tissue to select and appropriate from the blood stream the material which is especially adapted to its individual need.

The combination tablet evil. Within recent years an alarming tendency to polypharmacy has shown itself within the homoeopathic ranks. Its wide extent and rapid growth and unreasonable basis may soon lead to its downfall, but the tide can be stemmed in only one way, *i. e.*, by individual resistance to its adoption in any case. There is no rational basis for polypharmacy in homoeopathy and its adoption can lead only to disaster to the school.

It is a reversion of type. It is a sign of degeneracy as homoeopathists. It is an inundation that has spread over the school as a result of faulty teaching. Not enough attention has been paid to studying drug action as a whole—to study drugs in action—and too much attention given to obtaining possession of a lot of isolated keynotes and characteristic indications with the clinical result of frequent change of remedies as these "characteristics" changed in our patient or new ones cropped out. With the frequent change came alternation and rotation, and lastly almost inevitably, mixture of two or more. The pharmacies were not slow in following in these footsteps of careless and busy practitioners, and soon supplied any and every combination.

Now it is a good thing to have these tendencies in our practice come forth to view. It saves us from a fool's paradise. Recognizing it we turn and enter again the ways that have proved in the past to be secure and that lead us onward to greater knowledge and usefulness. The corrective is the study of the philosophy of materia medica, of the great underlying principles of our art and drugs as a whole.—*Pac. Coast J. of Hom.*, March, 1915.

GENERAL SYSTEMIC DISTURBANCES AND CATARRHAL CONDITIONS OF THE NOSE AND THROAT

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THAT general systemic disturbances may affect local irritations, congestions and inflammations, especially in catarrhal conditions of the nose and throat, is an axiomatic proposition. How profoundly they may so affect such conditions is not infrequently overlooked by specialist and general practitioner alike.

It is also true that catarrhal conditions of the nose and throat not infrequently affect general systemic disturbances most profoundly and so much is this so that I am not certain but this discussion might be more helpful if we were to discuss the latter rather than the title assigned.

A criticism frequently heard is that specialists are "one idea men," and that this criticism at times is just, I fancy, none of us who specialize in any field will deny—that it is universally or even in a majority of cases true I do not believe. However, the fact that such criticism is made should emphasize to everyone the necessity of treating the body as a whole; not giving undue importance to the symptoms or pathology of this or that organ simply because our experience and training has made us most familiar with its diseases.

It is perhaps not too much to say that the mucous membranes of the body, with their marked vascularity and free distribution of nerve filaments, are peculiarly predisposed to the influence of general systemic disturbances of organic function or metabolic change; and of all the mucous surfaces those of the nose and throat and gastro-intestinal tract suffer most. For instance, how frequently does an ordinary attack of acute rhinitis give a history of a so-called "bilious attack," which may mean much or little, but very often indicates a sluggish functioning of the liver cells or a temporary interruption of the free flow of bile into the duodenum; or, how often a patient with a sluggish bowel action, a urine with a high percentage of indican, an enfeebled heart, or an impaired renal activity develop acute or chronic catarrhal

conditions of the nose, throat or middle ear—and it is due to the impairment of the powers of resistance of the individual whose opsonic index is low to the invading organism. Years ago we heard much of the so-called "scrofulous taint" as a predisposing factor in these acute and chronic cases of rhinitis; later it was called the "tubercular diathesis," but as a matter of fact any condition of the physical organism that temporarily or with more or less chronicity will impair the physical condition of the individual reduces the physical resistance just that much and makes him or her just that much more susceptible to the effects of any germ; and this is true whether that lowered resistance is due to nervous debility, rheumatism, hepatic or renal disorders or the mental strain of the overworked business man or housewife. Again, we find that faulty elimination, insufficient exercise, abnormal arterial tension, pelvic troubles or gastric disorders may be the contributing factors in the lowering of vital resistance. So the painstaking physician will not only try to correct the physical infirmities for which he has been consulted and that he deems prejudicial to his patient, but he will advise proper care of the skin, the wearing of suitable underclothing, the proper ventilation of the home and the office, etc., that he may reduce to a minimum his patient's predisposition to these troubles.

Syphilis with its devastating, devitalizing action upon nerve fibre, osseous structure or mucous surface is a predisposing factor in these catarrhal states, not only in the new-born but in adult life as well.

It is also probable that the future unfolding (as it is) of new vistas of causation and cure will develop in the mind of the progressive specialist or general practitioner an appreciation of the importance of preventive medicine in these conditions.

It is no exaggeration to say that more than eighty per cent. of the tubercular cases seen each year developed as a direct result of neglect—a neglected cough, a neglected fever; and that ninety per cent. of these neglected cases might have been saved a tubercular death had the general public been educated to the view that the common "head-cold" was something worthy of the attention of a trained professional mind, and not to depend upon "home remedies" or the counter-prescribing pharmacist.

Contrary to general opinion I think that to make a correct prescription of the true similimum in an ordinary case of acute rhinitis

is one of the tasks that tax the conscientious prescriber vastly more than to select the correct prescription for some of what are generally regarded as more serious conditions. To give a cathartic, order an alkaline, antiseptic spray and to prescribe aconite, gelsemium, camphor, capsicum, or arsenicum does not prove that any one of them is the best remedy for an acute rhinitis, and even if one of them happened to be the similimum yet the physician's duty has not been done unless he has tried to ascertain what the general systemic disturbance was that made the cold possible and has given such constitutional or hygienic directions as are necessary to remove the probability of a recurrence.

With children many of the conditions can be traced directly to illy-ventilated school rooms. Architects for school buildings until very recently have been notoriously indifferent to the necessity of providing for scientific ventilation of our school buildings, and by this indifference have laid the foundations for these catarrhal conditions, because the child is denied proper amounts of sunshine and oxygen to make good blood for the nourishment of a sound body and the imperative needs of a growing child; while teachers, either from ignorance or indifference, ventilate class rooms with but little regard for aught else than their own physical sensations. Parents, too, need instruction as to the necessity of giving intelligent thought and attention to the weight and material of their children's underclothing, school-dresses or street wraps so that the child is not unnecessarily subjected to the chilling of a skin overheated by unsuitable wearing apparel. Undoubtedly these matters seem elementary in their necessity and simplicity, and yet, perhaps for that very reason, they are neglected by the profession in so many instances that I think no apology is necessary for their reiteration at this time.

With the symptomatology of these catarrhal conditions, acute or chronic, and with the pathology of them, it is quite unnecessary to occupy time or space in a journal of this character, but I should like to drive home to the serious consideration of every physician the fact that our duty is not, nor can it ever be, discharged until we use every means within our power to raise the physical resistance of our patient by treating all general systemic disturbances of functional activity, whether hereditary or acquired, constitutional or otherwise, and by so doing make him or her that much less predisposed to the develop-

ment of these catarrhal states of the nose, throat or other mucous surfaces that so often bring in their wake life-long misery, invalidism and perhaps death.

Voluntary displacement of the eye. Arthur H. Kimball, Washington (*Wash. Med. Annals*), reports a man aged thirty who digitally displaces the left eyeball from the socket, for the amusement of himself and friends. No abnormality of vision is noted, and it is specifically stated that the co-ordination by the extrinsic muscles is normal.—*Pacif. C. J. of H.*, March.

Chinese medical ethics. When a patient is severely ill, treat him as thou wouldst wish to be treated thyself. If thou art called to a consultation, go at once and do not delay. If he ask thee for medicine, give it to him at once and do not ask if he be rich or poor. Use thy heart always to save life and to please all; so will thine own happiness be exalted. In the midst of the darkness of the world be sure there is someone who is protecting thee. When thou art called to an acute illness and thinkest with all thy might of nothing but making money out of the patient, if thy heart be not filled with love of thy neighbor, be sure that in the world there is someone who will punish thee.—*Journal of Race Devel.*

THERE IS GOOD EVEN IN HURTFUL THINGS

SAMUEL HAHNEMANN, M. D.

IT is well known that the tailor's trade is not one of the healthiest of occupations. We find in these good folks, if they are diligent workmen, usually emaciated legs, knock-knees, a dragging of the left leg, round shoulders, the head bent forwards, drawn-in abdomen, and so forth. Their complexion shows very plainly the unhealthiness of their occupation; loss of appetite, piles, constipation, weakness of the body, itch, etc., are things quite common among them, and yet there are cases in which this mode of life has been favorable to health.

A young man in England was born with the feet turned inwards. A surgeon whom his mother consulted pronounced the deformity incurable. When he grew up he could only walk with difficulty upon the outer border of his feet and heels, he always knocked one foot against the other, and frequently fell; the muscles of his thighs and calves were extremely attenuated, and the turned-in feet were so deformed that shoes of a particular shape and tie had to be made for him.

The poorhouse authorities bound him apprentice to a tailor, thinking that this was the only trade that his deformity permitted him to follow.

In this work, whereby one usually sits at the shop-board, as is well known, with the legs crossed, he observed a gradual change in his limbs, which, without the slightest employment of external or internal remedies, continued to turn outwards. In the course of three years they attained their natural position, so that he could wear ordinary shoes, they were indeed directed more than usually outwards. The muscles of his legs grew stout, and his body was so well formed that he enlisted in the marines, and thenceforward remained in the service.

Probably in this case a peculiar stiffness (rigidity) of the muscles that adduct the foot was the cause why the abductor muscles could not maintain the balance of power, and so allowed the foot to be drawn inwards. The strain upon the former, when the legs were crossed at his work, stretched and relaxed them more, and thus the abductor muscles of the leg and foot were enabled gradually to attain

their natural opposing power; indeed the latter gained in this way an excess of power, and his feet were turned outwards more than is usual.

Joiners and cabinet-makers usually have the right shoulder higher than the left, because they exert the former most during their work. It might be tried whether individuals whose left shoulder was the highest would become straight by following these trades.

In like manner, to give another example of the good effects of hurtful things, there have been cases where by a stab of a sword in the chest, purulent deposits in its cavity that threatened a fatal result, have been opened, and where, after the murderous wound was healed, general health was the result.

So, also, persons who were paralyzed on one side of the body, on being struck by lightning have recovered the perfect use of their limbs.

I knew a melancholic gentleman who in a fit of the spleen wounded the veins in his neck, and, after losing several pounds of blood, recovered from his melancholy madness.

Cases have been recorded of patients who, in order to put a period to their sufferings, swallowed large doses of opium, and attained their object in this way—that they did not indeed die, but were completely delivered from their disease.

And how many instances might be cited where persons have become wiser and better by disease, or have grown healthier by calamity, misery and hunger, and have become more useful members of society! I know a physician, to whom the world owes much, who would never have adopted this honorable profession had not the delicate state of his health when a young man almost compelled him to do so.

He who has made a narrow escape from drowning learns to swim, and by this accomplishment is enabled to save the lives of others.

The police-inspector has his house burnt down, and the fire engines of the place are put by him into a state of perfection.

Yon prince would not have placed the lands of his subjects in a state of security against inundations had not some of his own estates been fearfully inundated; and had not his throne been several times shaken by the thunderstorm, he would not have introduced the valuable lightning-conductor into his dominions.

Pfeffel and Euler must lose their sight in order to surpass the most of their fellow beings in poetical and mathematical talent; and, if we had space, we might adduce many other examples of benefits derived from injurious things, to the glory of the Creator.

THE IMPORTANCE OF CORRECTING VISUAL DEFECTS IN CHILDREN

Lewis C. Wessels, M. D.

Philadelphia.

The relationship between the medical inspector and the practicing medical profession should be most cordial and friendly, and close coöperation may redound to the advantage of both; to the profession by increase of practice, to the medical inspector by the greater number of his recommendations for treatment carried out, and what is more important, by the benefit to the child.

My specialty is a concrete example: Take the single defect, defective vision and eye-strain. In the year 1914 the medical inspectors recommended for treatment 22,531 cases of defective vision in school children; of this number only 6,735 were refracted; 3,842, or 57 per cent, were refracted at the Bureau of Health Eye Dispensary, 2,893 were treated by private physicians, opticians and dispensaries, leaving a balance of 15,796 cases untreated, but which should have been treated by you. In each one of these cases a note was sent to the parents of the child informing them of the defect and advising medical treatment. Why didn't you get them?

First, want of coöperation; second, ignorance; third, pride.

WANT OF COÖPERATION BETWEEN THE FAMILY DOCTOR AND MEDICAL INSPECTOR.

Mrs. Jones brings Johnnie to the doctor and says: "Doctor, read this note Johnnie brought home from that fool school doctor, saying I got to put glasses on him; I just won't do it. I never wore glasses until I left school and neither did his father, and there ain't nothing the matter with his eyes; and I just want you to write a letter to that fool doctor and tell him so."

Phew! The doctor is up against it. The Joneses are a little cranky but they are good pay; they have a number of small children and the services of the doctor are frequently required; he hopes and prays there is nothing much the matter with Johnnie's eyes so that he can

*Read before the Philadelphia Eye, Ear, Nose and Throat Society, February 8, 1915.

side with the mother. He proceeds to test the boy's eyes with his inadequate equipment, perhaps using a calendar ten feet away with letters and figures of a size that could readily be seen at thirty feet by the normal eye. Johnnie reads them perfectly; the mother exclaims joyfully, "I told you so!" And they let it go at that. Exit Mrs. Jones.

Want of coöperation between the family doctor and the specialist.

Enter Mrs. Smith. "Doctor, Willie brought a note home from school saying he has eyestrain and that I should see my doctor. Do you think there is anything the matter with Willie's eyes?"

"Huh! has eyestrain, has he? Come over here, son; read those letters over there." Willie does it perfectly, even to the smallest.

"The doctor says "Huh!" again. "He sees all right, don't he?"

"Mother says, "Yes, but his eyes get red and he has granular lids (blepharitis marginalis) and he often complains of headache; and he gets sick if he rides in a car."

"Ah!" says the doctor, "his stomach is out of order. I will give him some medicine for that." Exit Mrs. Smith.

Enter Mrs. Brown. "Doctor, little Frankie has a note from the kindergarten to get glasses for his crossed eyes; what do you think about it?"

"Huh! how old is Frankie?" "Four years."

"Does he know his letters?" "No, sir."

"How can I tell if he can see or not? Let him alone, he may grow out of it." Exit Mrs. Brown.

Enter Mrs. Williams. "Doctor, Thomas needs glasses; where shall I take him to be fitted?" Thomas's eyes are so bad that the doctor has no difficulty in verifying that fact, so he turns to Mrs. Williams and says, "I will give you a note to Mr. I. Fakem, the optician; he will sell you a pair of glasses for Thomas cheap."

Now, I do not mean to insinuate that all family physicians treat their cases as cited above—but that some do, and in this way many cases are diverted from the specialist where they rightfully belong.

Ignorance and pride may be considered together. It will require considerable home education to make parents appreciate the gravity of defective vision and the necessity for glasses to correct it.

Parents object because they think the wearing of glasses is an

indication of weakness and they do not want their neighbors to think that their children are different from others; or if they start to wear glasses they must wear them always. This may be true, but if the eyes are bad enough to require the constant use of glasses, it is better for the child to wear them and not jeopardize its future on account of the ignorance or vanity of the parents.

In some instances when children get glasses it is very hard to make them wear them; indeed, in some cases it is impossible without the cöoperation of parents and teacher. In certain defects children say they can see better without their glasses, which is true at first—until they become used to them and the strain relieved. In high degrees of astigmatism when glasses are first worn things look queer and distorted, distances are misjudged, the floor or pavement seems to come up, causing the lifting of the feet higher when walking; whereas before the correction, objects were distorted but seemed natural enough to the patient, so that when things were placed in their natural relationship to each other through glasses they had to learn to see all over again.

Parents must be taught that glasses which were satisfactory at first may become uncomfortable on account of the frames being bent out of shape, thus altering the axis of astigmatic lenses; also the lenses may be too close to the eye and become soiled by the eyelashes sweeping across them.

Ridicule is another cause why children do not wear their glasses—which should be discouraged by those in authority. Parents and others having charge of children should be taught that those needing glasses must wear them constantly; that they must be kept clean and the frames straight, and that neglect in this particular may lead to permanent injury.

Furthermore, we must instruct those in charge of children that all cases of defective vision depending upon refractive errors can be corrected by suitable glasses, but not by glasses bought from five and ten cent stores or opticians; and you must emphasize the fact that it is impossible to examine children's eyes properly without the use of a cycloplegic.

Opticians are not permitted by law to use drugs, so some of them advertise that they do not use what they call the "deadly drops," thus instilling a groundless fear in the minds of many people which deters

them from taking their children to competent persons for examination. I have used a cycloplegic in over 20,000 children's eyes without harmful results.

To my mind the only satisfactory method of refracting children is with the retinoscope. I have come to believe it almost infallible. I use it in all my private work, both adults and children, where a cycloplegic is used; while I verify it in intelligent patients I rarely have to alter my retinoscopic findings. In a clinic such as mine, running fifteen to twenty-five refractions in an afternoon, accuracy and speed are essential, and without the retinoscope it would be impossible to do the work.

Many poor children are considered mentally dull and backward on account of unsuspected visual defects. Eyestrain of any sort causes slow and difficult mental action.

When the teacher is explaining something on the blackboard, children with defective vision not seeing clearly the subject of demonstration are naturally uninterested. They are restless, troublesome, and talk to those near them, thus interfering with the progress of others. Time hangs heavy on their hands; longing to be in the open air at play, they become truants; they are backward in classes and remain socially backward after leaving school. Some may even sink to the criminal class and become public charges.

Those having defective vision all their lives are not aware of their defects; they suffer from headache, nervousness, and other reflex symptoms, which they think natural discomforts to be expected from a distasteful school life. As there is no external evidence of the defect, the mother disclaims that there is anything the matter with the clear and beautiful eyes of her child. So the conditions remain undiscovered until a systematic examination is made by a medical inspector, or other person competent to do it.

The results obtained from properly fitted glasses are often marvelous; the backward child progresses, the dull becomes bright, conduct improves, truancy ceases; headache, nervousness and sore eyes are cured, cross eyes are straightened and the whole mental and physical condition improvd.

A little urchin came to the dispensary some time ago with an order for glasses. Out of school he was a bright little fellow and as sharp as a steel trap, but his report showed that he was very backward in

class for his age; and no wonder, as a preliminary examination revealed that he had only 1/10 vision. After he was refracted and the correcting lenses placed before his eyes, his face brightened and he excaimled, "Hully gee! Mister, I never knew anyone could see like that. I see them little bits of letters down there. Say, mister, that's great! Will my glasses be like that?" He was assured that they would. Then he asked permission to walk around the room and look out of the window. The look of surprised pleasure depicted upon that child's face was most gratifying; but the situation was truly pathetic.

The furnishing of free glasses to poor school children not only increases the efficiency of the pupil and teacher, but has an important economic value as well, because if a child is backward and remains in the same class two or more years, it costs the state two or more times as much as it should to teach the child. In Phialdelphia it costs $35.00 or more per year to teach each pupil.

We are refracting now over 3,000 cases a year. If we save each one of these children but one year during their entire school life, we will save the city over $105,000.00 annually, not counting the children's time and their increased efficiency. So the furnishing of free glasses to school children is not a charity, per se, but a duty and an economic problem.

The writer has refracted 13,608 children at the Philadelphia Bureau of Health Eye Dispensary. The following table shows their position in class before refraction.

	AGE OF PUPILS—YEARS												
Grades	6	7	8	9	10	11	12	13	14	15	16	Total	Backward Pupils
8							7	29	49	22	9	116	31
7					1	8	50	93	66	18	4	240	88
6					9	95	229	255	113	32	7	740	407
5				17	148	296	520	433	146	50	3	1613	1152
4		1	27	206	543	682	709	510	169	31	8	2886	2109
3		21	318	695	825	695	563	365	123	45	3	3653	2619
2	22	256	633	686	523	313	218	127	63	21	3	2865	1954
1	298	381	325	209	116	73	49	26	16	2	0	1495	816
Total	320	659	1303	1813	2165	2162	2345	1838	745	221	37	13608	9176=67%

Figures on the broken line indicate the position of the normal average pupil. As a rule the position in class was in direct ratio to the visual defect, the worse the defect the more backward the pupil.

The worst cases were naturally sent to the dispensary, the first year in 1908; in that year 76 per cent of these pupils were backward. In 1914 the defects were not so serious, yet 62 per cent were backward. The average for seven years was 67 per cent retarded children, principally on account of defective vision.

Children's eyes should be examined before entering school. If this is not possible the medical inspector or teacher in making examinations should devote most of his time to the eyes of the children in the kindergarten and first grades; if this is done many grave refractive errors will be discovered early, and if corrected retardation will be prevented, and this will tend to relieve the congestion that usually exists in the lower grades by more frequent promotions of the visually defective.

But few children in the above mentioned class remained in school after the age of fourteen, the legal age at which children are permitted to work; 93 per cent of these were backward. They might have been equipped with a better education if their eyes had received attention when they were in the lower grades.

Thirteen thousand school children carefully refracted under a mydriatic should give a valuable index as to the kind of refractive errors existing among children with defective vision. The following are the diagnoses of 13,608 such refractions done at the Philadelphia Bureau of Health Eye Dispensary, 1908 to 1915:

Hyperopia	4460	
Hyperopic astigmatism	130	
Compound hyperopic astigmatism	5217	
Total hyperopic conditions	9807	73.2%
Myopia	497	
Myopic astigmatism	45	
Compound hyperopic astigmatism	854	
Total myopic conditions	1396	10.5%

Mixed astigmatism	1115	8.3%
Anisometropia	1080	8 %
Aphakia	4	
Total errors	13402	
Normal	206	
Total refractions	13608	

Now, to go back to those 15,796 untreated children suffering from refractive errors which should have been treated by you. How do I know they should be treated by you? Because the very poor we get, and the moderately poor and some others go to the other dispensaries; but the middle class who can afford to pay for your services, and many of the rich, through ignorance or false pride, will not allow their children to wear glasses. Therefore it is up to all of us to teach the family physician and the public the importance of correcting visual defects in school children.

1918 No. 22nd St.

DISCUSSION.

"The Importance of Correcting Visual Defects in School Children."

Dr. Chas. Robelen: I would like to ask Dr. Wessels if the muscular condition is taken into account.

Dr. Wessels: We do not bother much about the muscles. We never put less than one D. on a child unless it is referred back to the department for some asthenopic symptoms. Then we go over them carefully. The prime object of our work is to make the child see. We have to get results very quickly and we give fairly full corrections.

Dr. Robelen: I was taught to give full correction in hyperopes with esophoria, while in exophoria to cut down the correction.

Dr. Wessels: Theoretically you are perfectly correct.

Dr. Nagle: Le Fever in hyperopes with exophoria, takes off one D. and in many cases he gives them a minus glass where the refraction is plus. He also overcorrects myopia in some children.

Dr. Mackenzie: That would produce eyestrain; the ciliary muscle would be overworked. If there is present a heterotropia you could operate one of the muscles and if there is present a heterophoria prism

exercises would probably take care of the muscles.

Dr. Wessels: In cases of myopia, progressive, you should put on full correction and in high myopia it is necessary to give two pairs of glasses. In school children we must give glasses which will give them vision for the blackboard and also for near print.

Dr. Mackenzie: Do you ever use bifocals in these cases? Fellows has been using them. I should also like to ask if Dr. Wessels prescribes from the drops or post cycloplegic.

Dr. Wessels: I prescribe from the drops.

Dr. Mackenzie: What cycoplegics do you use?

Dr. Wessels: Homatropin, atropin, and scopolamin. These cases are brought to us by the nurse, who instils homatropin. In the case of parochial school children, we use atropin. Where children can be brought to the clinic early we use scopolamin. It is interesting to note that in negro children it takes twice as much scopolamin as in white children.

Dr. H. S. Weaver: My rule has been to prescribe a full correction for myopia. You can very frequently arrest progressive myopia by placing a full correction on the patient. In hyperopia I give the full cylinder correction and just as much of the sphere as I can get them to accept, even if it dulls 20/20 vision.

Dr. Wessels: We get many children who cannot talk English; there we must use our judgment in placing the correction.

Dr. G. P. Palen: I have been especially interested in Dr. Wessels' idea of coöperation particularly in reference to the general practitioner coöperating with the school physician. I think a great deal of blame for this lack of coöperation is to be placed on ourselves. We have not instructed the general physician that a child may have normal vision and yet at the same time have defective vision. It is not the fault of the general practitioner, it is because he has not been properly instructed. I think as a society, we could take this matter up and educate the general practitioner in this respect.

Dr. Hetrick: It is a very important subject and there is but one way to get at it and that is by educating the general practitioner and the laity. A series of papers should be read before societies and reprints made and sent to the general physicians. Many of the statements made by the Doctor are quite true. The general practitioner grows careless. In New York we have a little more coöperation. A

child is not permitted to return to school until the eyes have been attended to; then if a child is away from school any length of time the truant officer gets after them to know why the child is away. I think we should give the children the most accurate correction possible, especially the very young child, because during these years the acuity develops and clearness of this depends upon good vision. A great many of us do not pay enough attention to the fusion sense. Even if we have good muscles this should be investigated. I think more stress should be laid upon this point than has been.

Dr. Palen: There is one class of cases which I have met with and that is a class in which after a most careful refraction they will state they can see perfectly at a distance but they cannot use the eyes for close point for any length of time without great distress and indistinct vision. In this class of cases I have found the trouble to be in the ethmoid. I recall a case only the other day in which after a few applications of argyrol tampons the condition was relieved.

Dr. Hetrick: Along the same lines which Dr. Palen has spoken, here is where your fusion comes in. We have been working upon these lines and we find frequently they will fuse geometric designs but they do not fuse colors. By having these cases use color fusion for a time they will be relieved.

Dr. Mackenzie: I have seen some of these cases which Dr. Palen refers to and I have found they were due to lack of fusion.

Joseph V. F. Clay, *Secretary*.

EPILEPSY AND EYESTRAIN

E. H. Linnell, M. D.
Norwich, Conn.

True epilepsy is considered to be a pure cerebral neurosis, unaccompanied by tangible or uniform brain lesions. When the seizures are associated with acute cerebral affections, such as meningitis, uræmia, etc., or with chronic conditions, tumors, exostoses, syphilis, etc., the convulsions are termed epileptoid or epileptiform. The same distinction has been made where the exciting cause is some form of reflex irritation. The force of this distinction will be discussed later.

Gowers defines idiopathic epilepsy as a disease in which there are convulsions of a certain type, or impairment of consciousness in which the convulsions are not directly due to organic *active* brain disease or to abnormal blood states, or to *reflex irritation*, and in which isolated loss of consciousness is not the result of primary failure of the heart's action.

He states that the convulsive phenomena sometimes attending *old* cerebral lesions such as depressed spiculæ of bone, morbid growths, etc., may resemble epilepsy in their symptoms and course, and he also states that peripheral irritations may give rise to convulsions which are perpetuated owing to changes in the nervous structure, such as impairment of the nutrition of the delicate cells, or lowering of function caused by the initial convulsion. After one attack, he says, others follow without any immediate discoverable cause, each fit apparently leaving a change in the nerve centers which facilitates their recurrence.

He thus recognizes peripheral irritation as an exciting cause of *epileptiform* attacks, but not of genuine epilepsy.

Wilson thus defines the two principal manifestations of epilepsy, viz: major attacks in which there occur sudden brief recurrent discharges of nervous energy, not due to a normal cause for such discharges, and characterized by a brief tonic and later clonic spasms of a generalized type, accompanied by unconsciousness and followed by signs of physical and mental exhaustion; and petits maux which consist of attacks of momentary unconsciousness, forced movements of

various kinds, either of the whole body, or of some motor function, or of some vocal ejaculation.

I quote thus in detail these accepted definitions, in order to compare them with the effects of eyestrain to be considered later.

All authorities agree that the pathology is indefinite and not constant, and usually not recognizable.

Worcester in "Arndt's *Practice*" gives the following definition: A chronic cerebral neurosis, characterized by paroxysms of unconsciousness, by general or partial convulsions, and by mental disturbances of a peculiar kind. Loss of consciousness he regards as the essential feature. Those causes which are associated with recognizable organic morbid conditions, such as tumors of the brain, exostoses, syphilis, etc., he designates as *epileptiform*. He also emphasizes the fact that true epilepsy without a discoverable central lesion is a pure neurosis.

Admitting the truth of this statement, it is pertinent to inquire what gives rise to these explosions of nervous energy. Is it reasonable to classify those cases as epileptiform and not genuine epilepsy where the manifestations are identical, but where a definite though remote exciting cause can be demonstrated? In other words, where the central neurosis is not primary, or idiopathic, but due to a reflex irritation in some distant locality?

While it is proper to exclude from the category of true epilepsy those cases associated with organic central lesions, as before enumerated, and also those transitory convulsive seizures which occur in children during dentition, or from intestinal disturbances, and other single attacks due to a definite and evanescent cause, I submit that to style those cases as epileptiform where the fits recur with more or less frequency over a considerable length of time, and where the clinical manifestations coincide with the classical picture of true epilepsy, as previously quoted from accepted authorities, is a refinement of diagnosis not supported by fact, and which does not appeal to sound logic.

I would therefore define true epilepsy as a chronic neurosis either without apparent exciting cause for the paroxysms, or due to a persistent peripheral irritation, and I would designate as epileptiform those isolated attacks due to some transient exciting cause such as strong mental depressions, sudden grief, anger, etc., to dentition or intestinal irritation such as occurs in children; those associated with eruptive

and other fevers, and those attacks occurring with organic cerebral disorders, either acute or chronic.

The literature of recent years contains frequent reference to the subject, and many cures of cases due to various sources of reflex irritation have been reported. Doubtless errors in diagnosis have sometimes been made, and in other instances sufficient proof of recovery has not been offered; nevertheless, the testimony of so many investigators, many of them men of recognized ability and trustworthiness, is deserving of careful consideration.

These cases occur in persons of a strongly neurotic temperament with whom there is often a family history of previous epilepsy or insanity. Inherited syphilis often exists in these individuals, with defective intellectual development. The latter, however, may exist without syphilis and be the result of other influences. The remote cause, viz: the constitutional predisposition thus induced is of vastly more importance than the exciting cause. The latter is often apparently insignificant and frequently overlooked. It may be dental irritation, helminthiasis or other intestinal disorder, or a reflex influence from sexual or other nervous excitation. Frequently it is some strong mental impression, such as fright, excitement or sudden grief. These conditions *alone* are incapable of originating true epilepsy, but they are all recognized as adequate exciting causes of the disease when *added* to a pronounced predisposition to epilepsy; and any one of them, on an appropriate occasion, may serve as a match to fire an explosion of nervous energy resulting in a convulsive seizure. A repetition may occur from the same or a similar cause, and the susceptibility of the individual increases with each attack, until they recur without assignable cause, and thus true idiopathic epilepsy is developed.

If a transient condition such as those mentioned, or a violent fit of anger or fear may thus become the exciting cause of convulsive attacks which continue to recur without a repetition of the initial cause, it seems much more plausible to assign a causative influence to a *permanently* active source of nerve waste as is found in eyestrain, and it is a significant fact that Semeling, in *Charité annal.* XI, p. 389, asserts that anomalies of the eye occur in 20 per cent. of all epileptics.

This seems all the more reasonable when we stop to consider for a moment how complex is the faculty of vision, demanding as it does the exercise of various and intricate nervous activities. The first

requisite for binocular single vision is that an image of the object shall be formed upon corresponding portions of each retina, otherwise the two retinal impressions cannot be united into a harmonious single perception and diplopia results. In order that the image may fall upon corresponding retinal points the functional integrity of the four recti and the two oblique muscles, by which the harmonious associated movements of the two eyes are obtained, is essential.

This means uninterrupted and harmonious innervation along the lines of the third, fourth and sixth nerves, proceeding from physiologically intact centers which preside over and regulate the ocular movements. The normal exercise of the faculty of accommodation is also essential to perfect vision, as well as the movements of the iris, calling for exercise of other fibres of the third and of the sympathetic nerves. Supposing these factors to be physiologically and anatomically perfect and the dioptric media to be transparent and of proper refractive power, the conduction of visual impressions through the optic nerve must be unimpaired, and the visual centers in healthy condition, in order that the impressions thus received may be converted into intelligent perceptions of form, size and color, and that accurate conceptions of the nature, distance and position of objects may be obtained. When we remember that during all our waking hours the eyes are in constant use in either distant or near vision, and when we consider the close application required of the student, the artist, the professional man, the bookkeeper and the skilled mechanic, we are in a position to realize the amount of nervous energy which is thus called for, and to appreciate the strain resulting from any abnormality of structure or function in the visual apparatus and the influence which such strain exerts in the development and maintenance of functional neuroses in persons of a neurotic temperament. In all such cases it should be remembered that eyestrain is an important factor to be considered.

Another argument in support of the influence of eyestrain is offered by the fact that visual auræ precede an attack in a large number of cases of epilepsy. Gower says (*Diseases of the Nervous System*, Vol. 2, p. 739): "A visual warning is twice as frequent as all the other special sense auræ together. It may be a sudden loss of sight, but is more frequently a visual sensation, a flash of light or sparks, or flashes of color. Usually many colors are seen, red and blue most

frequently. It may be an elaborate sensation, or a definite image or object, for instance, an old woman with a dress of some certain color, ugly faces, animals, etc."

An aura, either sensory or motor, "gives us information of the functional region of the brain where the process of the fit begins," and such auræ as enumerated clearly indicate that in many cases the visual center is the locality where the "discharge" commences. Aural warnings associated with the sense of vision are of varied nature and location, and are more common in epilepsy associated with organic cerebral lesions than in the idiopathic variety, and they do not usually indicate an ascending irritation from the part where the peculiar sensation is felt, but are rather the expression of a central irritation referred to the extremity first affected. Clinical experience teaches that the converse may be true, viz: that peripheral ascending irritation may be the cause of the attack. Gowers mentions a case which illustrates this fact. A boy received a severe cut on one of the fingers of his right hand, which was followed by epilepsy. The spasms always commenced in the hand, and were arrested by amputation of the injured finger.

Visual auræ may be dependent upon eyestrain, and the cure of epilepsy by the correction of ocular anomalies is explained, as in the above case, by the removal of the cause of peripheral irritation.

The path by which such influences travel from the eye to the brain is uncertain, but the hypothesis that anæmia of the brain, due to vasomotor spasm, is the immediate cause of the explosion of nervous energy manifesting itself by the epileptic crisis, would afford, if proved, a probable explanation of the path of the ocular reflex through the intimate connection of the cerebral and sympathetic nerves which exist in and around the eye, and their mutual physiological and pathological relations.

Various eye symptoms have been noticed during an epileptic attack, such as spasm of the orbicularis and deviation of both eyes toward one side, and rolling movements. The lids may be open or closed and the conjunctiva is insensitive. The pupils may be contracted at the beginning of the attack, but this is not invariable. Dilatation with inaction to light comes on simultaneously with the cyanosis, and continues until signs of consciousness begin to be manifested, when the mydriasis ceases. Afterward there is alternate dilatation and con-

traction, changing every few seconds during an interval of several minutes; frequently in the interim between attacks there occur variations in the size of the pupils without apparent cause.

Much time and space might be occupied in quoting from various authors' reports of cases of epilepsy dependent upon eyestrain and cured by removal of the same, but I will not do so, as they are more or less familiar.

It is proper to remark in this connection that cases of epilepsy have been cured by a variety of trivial operative measures where the results must be attributed to the influence of suggestion. After making due allowance for such influence and for too enthusiastic opinions, and for errors of judgment and of diagnosis, many cases remain too well authenticated to admit of doubt.

Ranney in his "*Eye Strain in Health and Disease*" says: "Experience has clearly demonstrated that epileptic seizures may follow peripheral lesions from reflex irritations thus originating. This cannot be denied in the face of overwhelming evidence."

The reader is referred to his little book for many interesting cases, narrated with detailed history and convincing diagnosis, in which is demonstrated incontestably the result of eye treatment, correction of refractive errors and of muscular imbalance, in curing cases of severe and long continued epilepsy.

Dr. F. Parke Lewis reported a notable cure in the "*Eye, Ear and Throat Journal*" for January, 1895. In connection with this case, Dr. Lewis remarked: "Other cases of like character might be given in which high degrees of exophoria and also astigmatism have been the exciting causes of epilepsy. In one instance whenever the accommodation was relaxed by atropin all convulsive tendency immediately disappeared, and did not return while the mydriasis was maintained. . . . To fail to recognize the reflex nature of these cases is to shut our eyes in the only direction from which we may confidently look for relief. The fact that all epilepsies have not a reflex origin, or the equally palpable truth that muscular insufficiencies and other nerve strains exist without causing disturbances, either epileptic or otherwise, is no argument against the conclusion that I have drawn, and only leads to a plea for a more careful differentiation of symptoms and their probable cause in diagnosis, and a greater hesitancy in resorting to bromides, or any palliative measures which may be of

doubtful efficacy in the one set of cases, and must be of positive injury in another more complicated, and less easy to diagnose epileptic group.

In conclusion I will briefly relate two cases that have come under my own observation.

Miss J. H., aged 16, was a well developed girl with red cheeks, dark hair and eyes, and of rather plethoric and nervous temperament. When about fourteen years old she had two epileptic seizures associated with delaying menstruation, and accompanied with severe congestive headaches. All symptoms disappeared with the establishment of regular and normal menstrual periods. She consulted me in March, 1893, again suffering with headaches and flushed face and with her menstruation a week over due. The immediate symptoms were soon relieved, but six weeks later, while traveling, she was found in an unconscious condition about 2 A. M. She was removed from the sleeper, and taken to a hotel, and did not regain consciousness for several hours. No convulsive seizure was reported, but under the circumstances it might have occurred during sleep and without being recognized. This attack was not connected with menstrual irregularity as the previous ones had been. It was followed by a period of extreme nervousness and excitability, flushed face, dilated pupils and headache.

Two weeks later while in school she was seized with clonic convulsions of one arm (which she said she had had twice previously), accompanied with a dazed feeling and nausea. At this time the first ophthalmoscopic examination was made, with negative findings. For some months after this attack menstruation was again irregular, but there were no more epileptic seizures, although she had occasional headaches. These became more distressing and of daily occurrence in August, 1895. They were, as they always had been, of a pronounced congestive type, coming on in the morning and gradually increasing as the day wore on. Now, for the first time, the headaches seemed to be aggravated by using the eyes. An examination of the refraction disclosed a low degree of hypermetropic astigmia, and +.50 cylindrical lenses ax. 90° were prescribed for near use. She had at that time a left hyperphoria of 1° which was not corrected.

I did not see her again for a year, when she had another severe nocturnal epileptic seizure, the first in four years. She had for a long time, since using the glasses, been free from headache and menstruation

had been regular and normal in all respects. This last attack, it was noteworthy, again followed a long car ride, necessitating muscular and accommodative strain in looking from the car window at passing objects. The refraction at this time was found to be the same as at the previous examination, with a left hyperphoria of ½° and an esophoria of 1°. The muscular imbalance was the same both in distant and near vision and a prism of ½° base up before the right eye was added to the former astigmatic correction. The lenses were decentered slightly outward, and she was directed to wear them constantly.

All symptoms of headache were promptly relieved but as promptly returned when she broke her glasses two months later and went without them for a day or two.

She has had no more epileptic seizures but congestive headaches occur from time to time, with menstrual irregularities, or when for any reason she goes without her glasses temporarily.

It seems to me the diagnosis of epilepsy is warrantable in this case, although full details of the seizures are lacking, and also the causative influence of reflex irritation, both from the generative organs and from eyestrain, seems established.

It would be interesting to know to what extent, if any, eyestrain was responsible for the disorders of menstruation. It is also interesting and instructive to note the serious and severe effects which apparently resulted from a small refractive and muscular error. The strength of the cylindrical lenses was subsequently increased to .75D but the manifest hypermetropia did not change.

The second case which I have to record is that of Walter C., aged 22. I first saw him at his home July 30, 1896. He had been subject to epileptic seizures for four years. He had at first attacks of vertigo and later convulsive attacks with unconsciousness followed by deep sleep. He was treated by both old school and homoeopathic physicians without success and grew steadily worse. He became a nervous wreck and was so apprehensive that for months he had not left the house. The last time he had been persuaded to go out, he got into a carriage, but rode only a short distance before he became so nauseated and generally upset from fright and nervousness that he was brought back. Reading only a few moments produced intense vertigo and distress in his head which would sometimes last for twenty-four hours. Examination of his refraction disclosed a compound hyperopic

astigmia. There was no hyperphoria, but an exophoria of ½° for distance and 6° in accommodation. After several examinations I prescribed for constant use +.12D^{s} = +.50D^{c} O.D. and +.25D^{s} = +.50D^{c} O.S. Axis 90° in each eye.

One year later my case record contained the following note: "A changed man. Expression bright and animated. Eyes clear and bright. Entirely free from nervousness. Goes anywhere he chooses to, at any time. Is in active business, and has no difficulty with eyes or head. Uses his eyes freely. Has had no more convulsions. Once in about two months, and always at night, has a slight tremor, but nothing resembling a convulsion, and never any loss of consciousness or deep sleep. Has taken no medicine and has had no other treatment."

A CONNOISSEUR

A well-known race horse owner said to a veterinary surgeon:

"How is it you haven't called on me for your account?"

"Oh," said the vet., "I never ask a gentleman for money."

"Indeed! Then how d'you get on if he don't pay?"

"Why, after a certain time I conclude he's not a gentleman, and then I ask him."—*Tit-Bits.*

AN IMPROVED EYE SPUD

Henry W. Champlin, M. D.,
Towanda, Pa.

THE cut shown herewith is intended to represent an improved spud for removing foreign bodies from the cornea. The improvements consist chiefly in the narrower face and blunt point, correcting the two chief faults of existing forms of the instrument.

The shaft of this instrument is rectangular—one-half mm. by one mm.—the face being one-half mm. wide, and the depth one mm. The angle of the beveled point is forty-five degrees. This wedge-shaped end favors displacement of the foreign body as it is pressed down—acting much as the dentist's gouge as he presses it home in the alveolar socket, thus dislocating an offending root, on the principle that two bodies cannot occupy the same place at the same time. The obtuse angle of the point prevents penetration of the cornea, as well as favors displacing the foreign body to one side or elevating it. The narrow (½ mm.) face of the spud does not erode as much surface of the cornea, and yet just as readily lifts the foreign body from its embedment. The depth of one mm. is to add bluntness to the point and rigidity to the shaft.

The spud ordinarily used scrapes too much corneal surface without getting a lifting effect on the foreign body. The spear-pointed instruments penetrate the tissues, thus hindering action on foreign body.



FOREIGN BODIES IN THE EXTERNAL AUDITORY CANAL*

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FROM the earliest times foreign bodies in the external auditory canal have excited much interest, and considerable importance has been attached thereto. Accordingly, the earliest writings contain detailed descriptions of the various foreign objects found in the ear and the means for their extraction. In some instances "The cure was worse than the condition." Celsus, in his treatise, "De Medicina," recommends, in obstinate cases of foreign body in the ear, that the patient should be laid upon a table and upon the affected ear. The surgeon then strikes with a hammer upon the table in order to dislodge the foreign body by concussion. Archigenes states that in cases of this sort in children the child should be seized by the feet and well shaken. Aegineta, in the seventh century, suggested post-auricular incision when other methods failed in the removal of foreign bodies. Hippocrates also is said to have recommended this procedure. Many of the earlier therapeutic measures in aural conditions consisted in placing foreign substances in the ear. Galen recommended the use of red pepper to relieve the pain of an inflamed ear. Marcellus recommended frog fat, urine of pigs, children or men, and the blood of a young chicken for ulcer of the ear. The saliva of a hungry man was also recommended to allay aural distress. In 1560, Johannes Arcularius suggested a unique method of extracting foreign bodies from the ear. The head of a lizard was to be cut off, placed in the affected ear and allowed to remain for three hours. The head was then to be removed, when the foreign body would be found in its mouth.

In Shakespeare's time there was prevalent in England the idea that poison poured into the ears was as dangerous as if taken into the stomach. You can thus see that the presence of a foreign body in the external auditory canal was considered a very dangerous condition, and hence the anxiety to remove it at all hazards.

Foreign bodies may be introduced into the ear and remain in situ for long periods of time without exciting the slightest inconvenience.

*Read at the November meeting of the Clinico Pathological Society.

Literature abounds in reports of these. Gleason reports removing a cherry-stone from the ear of a medical student. The stone was shrunken and black and the student dimly remembered having placed it in his ear when a child. Politzer found a slate pencil three cm. long in the ear of a patient seventy years of age. According to his own statement, it had been in the meatus for fifty years. The patient experienced no discomfort from the object, hence did not seek advice until his hearing became dull by reason of an accumulation of cerumen. The author removed from the left external auditory canal of an Italian male, age twenty-four years, the specimen which you here see. He claims that when he was ten years of age he put a grain of corn in his ear. He told his parents about it, but friends advised that the corn be allowed to remain; that it would eventually grow out. It gave him no trouble until a few days ago, when he developed pain in the left ear. You will see upon examination of the specimen that we have a foreign body upon which the cerumen has accumulated. The canal was much widened at the isthmus, the site of its lodgment. The foreign body appears to be a bean rather than a grain of corn. Reim removed a molar tooth which had been in the ear for forty years.

On the other hand, the presence of foreign bodies in the external auditory canal may excite very annoying reflex symptoms. These occur as a result of irritation and pressure. Coughing is a common reflex symptom in this class of cases. You are all probably familiar with the patients who cough as soon as an aural speculum is introduced. Vomiting, excessive salivary secretion, hemicrania, facial paralysis and epileptic convulsions have been reported (Poulet). Theobold (*Trans. American Otological Society*, Vol. V, p. 508) reports a case of inability to swallow food excited by the presence of a plug of cerumen in the external auditory canal.

Foreign bodies in the ear may be divided into inanimate and animate. Under the head of inanimate objects, almost anything that can be placed in the canal has been found there. Children are very prone to introduce into the ear beads, small fruit stones, peas, beans, grains of corn, pieces of slate pencils, pieces of paper, buttons, rubbers of pencils, etc., objects that they happen to be playing with. In the case of inanimate bodies in the canals of adults they are more likely to be objects introduced intentionally, and accidentally get beyond the reach of the individual.

There are many records of inconceivable foreign bodies in the ear. Morrison (*Dublin Jour. Med. Sciences,* 1838) reports a case in an alcoholic patient, forty years of age, who, in June, 1833, had nitric acid poured into his right ear. There was no symptom present but debility. Two weeks later paralysis of the right side of the face occurred, and six weeks later the patient developed paralysis agitans. The temporal bone had undergone extensive necrosis without pain. Alley (*Amer. Jour. Med. Sciences,* April, 1852) reports a case in a wharf laborer in whose ear molten lead had been poured. Seventeen months afterward the lead was still occupying the external auditory meatus. Deafness and palsy of that side of the face resulted. Holman (*South. Med. and Surg. Journal,* 1880) tells of a negro, aged thirty-five years, whose wife poured molten lead into his ear while he was asleep. It was removed but deafness resulted. Stein (*Jour. Opthal. and Oto-Laryng.,* December, 1911) reports a case of a scissors blade removed from the ear of a colored man, forty-three years of age. This had been *in situ* three years and three months. The blade measured one and three-quarters inches long, one-half inch wide at its broadest, and one-eighth inch thick at its back. It occupied an oblique direction from above and anterior to the tragus through the anterior superior angle of the membranous wall and across the auditory canal and through the inferior posterior angle of the membranous wall, so that the blades rested against the anterior surface of the mastoid tip with one flat surface toward the drum and the other toward the meatus.

The author removed from the left ear of a woman a part of a hairpin which had been bent into a shape similar to a fish-hook. This she introduced into the canal, pushing it beyond the isthmus. Entering the wider portion of the canal beyond the isthmus, the hook-like process sprang open, and, upon her attempting to withdraw the pin the hook became firmly imbedded in the membranous lining. It was necessary to disengage the pin and permit it to remain *in situ* until the severe bleeding had ceased, when an aural snare was thrown around the hook. By drawing upon the snare wire, it was possible to reduce the angle of the hook so that it would pass the isthmus.

Another interesting case of foreign body in the ear which came under the author's notice was that of a piece of lead pencil in the ear. A child, playing with a lead pencil having a sharp point, placed the pointed end in the ear. His brother pushed the pencil into the ear

and when the mother withdrew the pencil the point was broken off. Upon examination the broken end of the pencil could be seen sticking in the puncture wound in the posterior portion of the drum. It was removed with a pair of aural forceps.

The insane occasionally place foreign bodies in the ear. In addition to the more common objects they place particles of food in their ears. While talking with Dr. H. F. Hoffman, of the Homoeopathis State Hospital at Allentown, about this subject, I learned that they usually find this trick in the patients of the dementia praecox class, those having auditory hallucination.

The class of animate objects in the external auditory canal is an interesting one. The older text-books speak at length concerning worms in the ear. Chronic suppurating ears attract the larvæ of insects which germinate from eggs. These are deposited in the pus, it being supposed the odor of the discharge attracts the insects. The muscida sarcophagus and muscida lucilia produce agonizing pain. Blake (*Arch. Ophthal.*, IC) made a study of these larvæ and found that they attach themselves by a strong but delicate framework of horny consistency, and two hooks also of a stout horny structure articulating with the framework. The larva burrows its way into the tissues, on which it feeds, and, by repeated extension and contraction the hooks alternately pierce and tear.

The oxyuris vermicularis has been found in the external auditory canal. Yearsley (*Med. Times and Gaz.*, 1860, VI, p. 28) removed a worm five inches long. S. W. Reynolds (*Lancet*, 1880, V. II, p. 653) reports a pregnant woman who, after several days of persistent vomiting, ejected a number of worms by mouth and ears.

Insects of many varieties are found in the ears, the most common being the ordinary house fly. These are apt to be encountered in sportsmen hunting in brush and farmers and those given to taking their siesta on the ground. Spiders, bedbugs, birdmites, cockroaches (Theobold) have all been removed from the ears. The forficula auricularis, or so-called earwig, an insect which feeds upon the leaves of fruits and flowers, at times flies into the ear. There was an ancient superstition that it crept into the brain through the ear.

A very interesting and almost incredible case of insect in the ear came under my notice three years ago. A gentleman living in the suburbs was walking home one evening when he felt something fly

into his right ear. He was rendered dull of hearing, suffered agonizing pain and tinnitus. He was attended by a physician, who poured some oil in the ear. This relieved the pain but the dull hearing and tinnitus continued. I saw the patient the next day and upon examination of the canal found it occluded by a black mass. This was removed with a pair of aural forceps and proved to be a dragon fly. Upon spreading the insect out carefully it measured two and a half inches from wing tip to wing tip, its body an inch long.

Penthorum sedoides, Virginia stonecrop, is highly recommended, by an eclectic, for chronic nasal catarrh with no indications given; also for chronic pharyngitis, the mucous membrane purple and relaxed; chronic laryngitis, aphonia, hoarseness, relaxed vocal cords. It is slow in action.

When possible test and record vision before operating on or removing a foreign body from the eye, as protection against suit for loss of vision ensuing; often vision was poor without the person realizing it.

A CASE OF BILATERAL AUDITORY NEURITIS DUE TO POISONING BY ILLUMINATING GAS

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THE case we wish to report is that of a male patient forty-seven years of age, who was brought to the Hahnemann Hospital October 21, 1914. He was unconscious and the history obtained by the receiving interne was that the man was found unconscious as a result of inhaling gas. After using the pulmotor for fifteen minutes free breathing was established and shortly the patient regained consciousness. He was, however, unable to speak or hear. After twenty-four hours his speech returned, but deafness persisted. Upon questioning his wife, it was found that the man's hearing was good before he took the gas. Forty-eight hours later we saw the patient at the request of the medical department and found the following condition: The patient was unable to hear loud conversational tone on contact. It was found necessary to write all inquiries. The patient's speech was devoid of expression and he answered the questions in a peculiar monotone. He insisted he never had any trouble with his hearing before taking the gas. His only complaint was his inability to hear. The external auditory canals were free; the ear drums presented nothing abnormal. There was no nystagmus, no ocular or facial paralyses. There was no response to any fork by aerial or bone conduction on either side. The after-nystagmus to the left was fifteen seconds, to the right ten seconds. the caloric test elicited a very feeble reaction on both sides, without dizziness.

The patient was placed in hot dry packs. On the third day there was distinct evidence of a return of the auditory function; the patient could hear loud conversation at a few feet. It was no longer necessary to write questions.

Examination two weeks after the incident showed that the patient could hear a whisper at two feet in either ear. Rinne's test on right side showed bone conduction of twenty seconds and aerial of forty-five; on the left side bone conduction was twenty-five seconds and

*Reported at November (1914) meeting of the Clinico Pathological Society.

aerial fifty seconds. Weber's test was not lateralized. The after-nystagmus to the right was thirty seconds and to the left thirty-five seconds.

The patient was discharged from the hospital to return to the out-patient department for future observation, but, like so many of these hospital cases when they are dismissed from the wards, we never saw him again.

This case occurred in the service of Dr. Gilbert J. Palen, to whom I am indebted for the privilege of following and reporting it.

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When a foreign body in the cornea is surrounded by a halo of infiltration, advise the patient of the possibility of infection having occurred and that ulceration is imminent. When ulceration is threatening consider the case one of ulcer and institute suitable treatment at once.

In collyria real rose water should be used, not rose geranium water; the latter is irritating.

THE PREVENTION OF DEAFNESS

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DEAFNESS and the prevention of deafness have until recently been somewhat neglected. Children have been allowed to develop into adult life encumbered with a hardness of hearing which might easily have been avoided, or they have been allowed to develop with pathological conditions present which were absolutely certain to bring ear troubles later in life. Today much of that is being overcome and we are protecting our children by treating existent etiologic conditions. It is well that this is so, for of all the faculties which we possess hearing is one of the most important, and of all the possible handicaps in life the one which seems to be the most disheartening and the one which, with the exception of blindness, seems to be the most incapacitating is difficulty of hearing the spoken word.

The great majority of ear lesions are involvements wholly or partially of the middle ear, and the great majority of adults suffering from ear disease will give a history of more or less involvement when a child. The complications of childhood are principally adenoids and diseased or hypertrophied tonsils; the acute infectious diseases, as scarlet fever, measles, diphtheria, pertussis and typhoid, and pathological states of the nose. There is, too, a chronic exudative otitis media which manifests itself in adult life which tends toward progressive deafness, and which usually has as a continuous exciting factor some abnormality in the nose, pharynx or naso-pharynx. Among these abnormalities are diseased or enlarged turbinates, sinus involvements, deflected septa and hypertrophied or submerged diseased tonsils.

It has been stated that middle ear deafness comprisees 80 to 90 per cent. of the total number of those who come to the physician for failing hearing. In the great majority of these cases this condition is secondary to some primary cause in the nose, pharynx or epi-pharynx, extending to the middle ear as a result of some of the causes previously mentioned.

Therefore, we can truly say that if the ears of children are closely watched, if the naso-pharynx is examined and if better care is rendered when these affections are presented, much of the difficult hearing present in later life can be avoided. On the other hand, if diseased conditions of the nasal passages, pharynx and epi-pharynx, although they may seem slight and insignificant, are not relieved, the patient is very liable to develop middle ear complications at some future date.

Let us now consider some of the lesions which are predisposing factors. Since the great majority of etiologic factors have their entrance by way of the Eustachian tube, it naturally follows that we must consider conditions which cause an inflammation of this tube.

It seems to be pretty generally admitted that of all the pathological conditions of the pharynx, epi-pharynx or nasal passages causing inflammation, congestion or improper aeration of the Eustachian tubes in children, adenoid tissue is the most frequent. Nor is the ear involvement necessarily in direct proportion to the amount of hypertrophy. A small amount of tissue in close proximity to the pharyngeal orifice may be the cause of considerable involvement, either through preventing the entrance of the proper amount of air or by causing a constant though slight inflammation and congestion. Again, a small adenoid mass located in the vault of the epi-pharynx may be nearly as much of an etiologic factor.

It has been estimated that a very large per cent. of children having adenoids show ear involvement, and probably the percentage would be somewhat increased if we include all cases which show changes in the contour of the membrane or in its translucency.

It is very probable, too, in adults presenting themselves for treatment in whom we find a catarrhal involvement of the middle ear, that a certain per cent. of these cases had their incipiency in childhood as a result of a mild epi-pharyngeal inflammation, but because of the slow and insidious advance of the process the patient's attention has not been called to it before. Whalen quotes Dench, who says: "Adenoids are responsible for more than half the pathological conditions met with in the middle ear and they are the principal cause of deaf mutism."

The faucial tonsils, too, play a certain role in the causation of middle ear disease. Whenever the tonsils become inflamed this inflammation involves surrounding tissues which include the entrance to the middle ear. Therefore, it is very easy to draw conclusions as to the

effect this will have either at once or ultimately upon the hearing. An hypertrophy, especially of the upper portion or velar lobe, will frequently prove deleterious through pressure on the tube, thus interfering with free ventilation.

The ears of patients suffering from the acute infectious diseases should be given the most careful attention, since a very large proportion of the serious deafness exhibited by children arises from this source. This also applies to such diseases as diphtheria, whooping cough and typhoid fever. The importance of such attention will perhaps be more fully appreciated when I quote Bryant[3], who says, "These infectious diseases are responsible for about forty-seven per cent. of the cases of serious deafness in children." Kopetsky[4] says, "The statement is not exaggerated that the institutions for the deaf mute are recruited almost exclusively from the ranks of those who have recovered from an acute infectious disease." He also says, "Among the infectious diseases that lead to deaf mutism, scarlet fever ranks first in order, as testified to by the inmates of the deaf mute asylums."

Thus it can be seen that too much stress cannot be laid upon a frequent careful inspection of the membrana tympani. If there is a beginning congestion of the drum or a bulging appearance and a rise of temperature otherwise unaccounted for, the drum should be incised at once.

The ears of patients in a comatose state or of children suffering from any of the above named diseases, but who are too young to make their discomforts known, should be inspected at regular stated intervals.

All adult patients suffering from chronic catarrh of the middle ear should be given a thorough examination of the nasal fossae. A certain proportion of such pathological states of the ear are caused by the inflammation resulting from a chronically diseased nasal chamber. One cannot give a definite prognosis in any given case as to the benefit in hearing which will follow, but certainly attention to these parts has been found well worth the effort. If the condition of a few is improved or even held stationary, the attempt has not been in vain.

From the foregoing it can readily be seen that in order to cope successfully with this ever-present condition we must attack it from the point of prophylaxis rather than trust to the results of treatment once the disease has become established; also that most careful atten-

tion must be given the ears and nasopharynx of our children if we hope to improve the ratio of good hearing among adults. At present probably the greatest obstacles to the attainment of this purpose are, first, that we do not keep these facts constantly in mind, and, second, that a certain amount of neglect enters into the case either on the side of the parent or of the physician.

[1]Thomlinson: *Medical Record,* September 27, 1913.

[2]Whalen, C. J.: "Importance of Early Recognition of Pathological Conditions and Tonsils and Treatment of Same."

[3]Bryant, W. Sohier: *Journal of the American Association,* March 22, 1913.

[4]Kopetsky, S. J.: *New York State Journal of Medicine,* December, 1912.

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Is a boric acid solution really antiseptic, in the strength applied to the eye? What proof have we that it is? Yet authorities follow each other in recommending this as sheep follow their leader over or through a hedge—and quite as unthinkingly. J. L. M.

MEDICAL LICENSURE

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AS an indication that doctors of medicine are not satisfied with the present conditions regarding license to practice their means of making a livelihood, we find almost every month of the year in one or more of our leading medical journals an article of protest by some physician or editor against the absolutely unfair advantage which is thrust upon a noble profession, should any of its members desire for any reason to change his location to another state.

The utter unreasonableness and positive absurdity of saying to a competent physician that, while you may be capable of practicing medicine in Michigan, for instance, the moment you come into Ohio and endeavor to do the same thing you will be arrested—unless you comply with certain conditions; namely, if you happen to have been in practice before January 1, 1900, and shall have been in possession of a license and diploma December 31, 1899, then you may, by giving up $50.00 of your hard earned cash, have the advantage of reciprocity without examination. But if your diploma and license were issued one day later than the above mentioned date, then you may get in for $25.00, provided, however, you take the State Board examination and successfully pass the same. There evidently must be a vast difference in the qualifications of a physician who got his license to practice on December 31, 1899, and one who was licensed the following day.

In Minnesota a doctor who was licensed on December 31, 1886, is admitted to practice without examination, while one who was unfortunate enough to have his license issued the following day is not so well qualified—even if he graduated from the same college as did his more fortunate brother, and must pass an examination before he is allowed to minister in a medical way to the wants of your family.

A competent physician from Illinois desires for some good reason to move to Oregon. What must he meet? For some reason, Oregon reciprocates with no other state in the Union. No matter how capable a practitioner this doctor may be; no matter what special training he may have had, even in addition to the ordinary requirements; no

matter how high he has stood in the community in which he has lived; no matter how many years of successful experience he may have had; no matter if he has had a state-wide reputation, and has been one whose counsel was frequently sought by his fellow practitioners, yet he must "bone up" and appear before the medical board, any member of which may be less competent than the applicant. And, worst of all, he may fail to pass. This has happened many times to the most capable men.

Many of the ablest professors in our best medical colleges would fail before most state boards without "boning" because of the technical, generally impractical questions asked in certain subjects. We venture the assertion that not one state board member of any state could successfully pass any other state board if compelled to take the examination on short notice and shown no favors. This being true, why then should the average hard-working, conscientious doctor be taken advantage of?

If a doctor is capable of practicing medicine and surgery in New York he should be capable of practicing in Washington. But the Washington State Board says *no*. Human life is more sacred in Washington than in New York. We cannot permit this New Yorker to trifle with the lives of our citizens—nay, nay; let him appear before our Board and we shall see what manner of a doctor is this. He appears. He has forgotten the origin and insertion of some of the muscles asked about; he doesn't just recall all of the twenty-one points of interest on the under surface of the brain; he has forgotten many of the chemical formulae which he knew when he was in college (for he has been in active field service for seventeen years); he cannot now bring to his mind definitely several of the methods of staining the various bacteria; in fact, he has been so busy curing sick people that these real practical things have crowded the impractical back into the remote corners of his brain. He knows a case of pneumonia when he sees it and yet he probably could not give all the symptoms like the books give them. But he knows what to do for a case of pneumonia, likewise for dysentery, typhoid fever, whooping cough, mumps, various ulcers, etc. So the board may fail him and he may have the privilege of returning again at some future date and trying it over.

How nauseatingly absurd is the whole affair. The Washington Board says, when it fails to allow complete reciprocity (either under

Qualification I or II) to the New York applicant, "If you licensed this man in New York you are incompetent to judge of his fitness to practice; we do not recognize your test; we will make one of our own, giving your decision in the matter no consideration whatever." Discourteous to say the least, isn't it?

Now we do not wish to be understood as advocating a lowering of the standard of medical practice. But we do *not* believe the present methods of licensure have a special tendency to raise the standard. The mere fact that a student can pass a state board examination does not mean that he is competent. He must possess in addition to this a liberal amount of good common "horse sense." He may pass all his examinations with 100 plus and yet be an absolute failure as a doctor.

Some of the boards have gone so far now as to allow five per cent. in an examination for each ten years of practice. What an inflated (?) value they place upon experience. If you were calling a doctor in your family—would you prefer the one who had just graduated and received his diploma and license, or the doctor who had been in practice ten years? Usually the latter. And yet the former could more easily pass your board than the latter.

Should we require the legitimate specialist who is confining his practice to one particular line to pass all the subjects outside of his specialty—if he has once been licensed by one of the states? Is it fair?

Since it is impossible to have a Federal licensing board without a change in constitution, we believe this matter could be adjusted by our various state boards and national reciprocity be thus brought about. This would of course necessitate the adoption of a standard; which could not be done unless some of the boards would come down from the house tops and others come out of the cellar and thus meet on common ground. It would mean a game of "give and take." Let license from one state be an admission by reciprocity to every other state.

You say the standards in the various states are so different. But why do not states with practically the same standard have unqualified reciprocity? There is some reason for it and it may not be a good one either. If a doctor is not qualified to practice in one state he is not qualified to practice in another state, viewed from the standpoint of common sense and justice. Let us give these matters serious consideration. Doctor, think of your *rights* in this matter. Medical

editors, is it not your duty to endeavor to create sentiment against the unfair advantage which is thrust upon our profession in relation to the state board question?

Let the members of the medical boards put themselves in the place of the doctor who is endeavoring to get a license from another state board.

Let us at least be fair with each other.

The importance of searching for foci of infection in the tonsils, teeth, ears and mastoids, in the sinuses of the head and face, as well as elsewhere in the body, is often brilliantly emphasized by the clearing up of long-standing cases of albuminuria and of "gout."—Fischer, *"Edema and Nephritis."*

The absorption of water by the eye is governed by the same laws as the absorption of water by fibrin or gelatin.—Fischer, *"Edema and Nephritis."*

THE RELATIONSHIP OF DENTAL PATHOLOGY TO EYE, EAR, NOSE AND THROAT CONDITIONS

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THE more we investigate the anatomy, physiology and pathology of the human body, the more we are convinced of the interdependence of one organ upon another. The human body is an organism far more complex and intricate than any machine made by man, not excepting the German military. The slip of a single cog disables more or less the whole machine until a repair of the part is made. If the repair is not made promptly other parts will be affected, and sooner or later the machine breaks up as a whole.

The best mechanician or physician is he who recognizes these facts, who possesses the ability to determine which part was primarily affected, and who then puts it right. The later the physician is called to see the case, *i. e.*, when other parts have become involved, the more difficult is the task of diagnosis and treatment, for the simple reason that the parts (tissues) secondarily involved may be creating a more intense disturbance than the tissue originally affected. For instance: The average case of acute mastoid abscess presenting itself to the otologist is promptly recognized as such because of the severity of the symptoms; while the original focus of infection in the adenoids or tonsils is often overlooked because of the apparent mildness of the symptoms. In other words, the secondary condition has eclipsed the primary one. Anyone can select from his experience innumerable instances showing how pathologic conditions in one tissue affect unfavorably neighboring tissues.

It is our duty as physicians to determine by study, research, reporting of interesting cases and by conference between specialists, the associations of the various organs to each other that we may the better prepare ourselves to cope with human suffering.

There are specialists who have devoted their whole lives to the study of problems belonging strictly to their specialty, and with fruitful results. The sum of the knowledge thus far obtained is great, but not nearly so great as it promises to be in the not distant future.

While this is true, we as physicians have been somewhat backward in that broader work of determining the exact influence pathologic conditions in one organ have on distant or nearby organs, or the general health of the individual. The dentist perhaps has done as much, if not more, than the specialist in any other line to advance our knowledge of the latter subject, especially when we consider their work in orthodontistry.

I question whether the accumulated knowledge already at hand is used sufficiently by most of us in the determination of the etiology or the cure of disease. Medicine has become so highly specialized that the specialist is too prone to see everything from his own narrow viewpoint. What we need most at this time and for the future is more good general men with diagnostic eye, capable of sweeping larger fields, who can locate promptly the original source of disease, far too often missed by the average specialist with his contracted field of vision.

The association of dentistry to rhinology is already well known. Anatomically the development of the teeth bears directly upon the development of the nasal cavity and anything which interferes with the normal development or eruption of the teeth interferes proportionately with the development of the nasal chambers. Pathologic conditions in the nose or nasopharynx, particularly when of an obstructive character, occurring during the period of dentition, tend to faulty development, eruption and approximation of the teeth. It is a knowledge of these facts that has given us the orthodontist and an appreciation of them that has brought the dentist and rhinologist closer together. Through their united efforts much excellent work has already been accomplished.

The proximity of the teeth to the maxillary sinus affords ample anatomical reasons for the co-involvment of the sinus when the teeth are affected. Some authorities concede that thirty per cent. of the cases of maxillary sinusitis are of dental origin. I believe the figure is entirely too high. Through some fault or other teeth may fail to erupt, and become impacted or inverted and give rise to maxillary sinus involvement in some cases, or to symptoms referable to the region of the sinus in others. Cryer and Zuckerkandl particularly show many illustrations of these conditions. I had the pleasure of pointing out these conditions and showing photographs in a paper read before your society one year ago.

Other pathologic conditions about the teeth may involve the maxillary sinus. You are familiar with so-called dentigerous cysts which form about the roots of teeth. They remain sterile for a long time. Eventually they may become infected and abscess, when the abscess may break through the canine fossa or upward into the sinus.

Caries of the teeth may give rise to sinus disease through extension of the process along the root canal, particularly when the root is freely exposed in the sinus or when separated by a very thin lamina of bone.

In other cases, especially in those depleted in vitality from some constitutional disturbance, caries and necrosis may extend from a tooth-socket to the superior maxilla and involve the sinus or primary nasal cavity. A similar process may occur from chronic mineral poisoning, typical of which is that found among phosphorus workers.

I may add that *any* pathologic condition of the teeth or alveolar process is liable to affect by extension the maxillary sinus, the nasal chamber proper or in fact the orbit. It was my privilege to report a case of the last mentioned condition to this society some time ago, with photographs. The case was that of a five-year-old boy with an inverted tooth that had grown upward and finally abscessed, leaving a fistulous tract from the inferior orbital margin running downward to a pocket of pus containing the tooth in the canine fossa.

The lower the resistance or vitality of the patient the greater the liability of extension of pathologic processes from the teeth to neighboring structures. Pathologic conditions in the sinus may affect the teeth, or more often they may seem to. For instance: In acute maxillary sinusitis the teeth often ache severely, so much so that not a few misguided dentists have removed sound teeth in the hope of relieving the suffering, but without the anticipated results. Aside from acute maxillary sinusitis other forms of sinus diesase, *i. e.*, foreign bodies, tumors, mucoceles, etc., may cause pain in one or more teeth of the upper jaw by direct pressure or by an actual neuritis of the nerves supplying the teeth. May I remind you that the foreign body in the maxillary sinus may be a broken dental drill or a tooth put there accidentally by the dentist?

Though the maxillary sinus may become secondarily affected from the extension of pathologic processes originating in the teeth, it is true only of the teeth of the upper jaw from the first bicuspid backward. Pathologic conditions in the teeth anterior to the first bicuspid will not affect the sinus, but instead the primary nasal cavity.

Pathologic conditions of the teeth or alveolar process of either jaw exert a detrimental effect upon the tonsils. Furthermore, the tonsils exist only in animals which bear teeth. When the tonsils are enlarged or acutely inflamed the inflammation may extend to the ear, so that the extension of infections from the teeth via the tonsils, pharynx and Eustachian tube is after all not an indirect route to the ear and mastoid process.

Pathologic conditions in and about the teeth may help to lower the patient's general resistance, and thereby act as indirect factors in the production of pathologic states in distant parts of the body. Furthermore, the teeth may be directly responsible, just as the tonsils have been, for infection in other parts. Quoting from Frederick S. Lee, *Jour. A. M. A.*, Sec. 12, 1914, p. 2088, "One of the leading orthopedists of America told me a few days ago of a severe case of arthritis which he had recently had in his practice. The patient had been bedridden for several months, unable to move, except with difficulty and much pain. * * * The physician, however, caused a thorough chemical and physical examination to be made, during which a roentgenogram revealed the presence of unsuspected local abscesses at the roots of several of the teeth. The removal of these affected teeth resulted in the prompt recovery of the patient from his joint disease."

Some would like to deny it, but most of us who have practiced general medicine have repeatedly observed constitutional disturbances, and occasionally a rash, coincident with the eruption of teeth. Faulty teeth are not a stimulus to Fletcherization, and deficient mastication of food is detrimental to digestion. Faulty digestion spells deficient assimilation and deficient assimilation, ill-health and greater vulnerability to disease. Conversely, general ill-health interferes with the normal development of the teeth. For instance, congenital syphilis is responsible for the so-called Hutchinson's teeth, and underfeeding is responsible for delayed dentition and the faulty structure of the teeth met with in rachitis. Other instances might be cited to show how the general health or local disturbances in distant parts of the body may interfere with the development or health of the teeth. In short, the body is made up of numerous organs which spell "One for all and all for one."

A tooth with a jagged edge may be the irritant that prompts the development of an acute or chronic ulcer of the tongue or buccal side

of the cheek; in rarer cases carcinoma.

A defective tooth may cause a neuralgia of the fifth nerve that may be reflected to the eye, the ear, nose or temporal region. Some years ago I had a case presenting itself for continuous earache with acute exacerbations. Recognizing an extremely nervous individual, and finding the ear negative, I assumed the case to be one of hysteria. A searching examination revealed an obscure dental condition. The removal of the offending tooth caused a prompt disappearance of the earache.

N. M. Black, in discussing the subject of glaucoma in a small book entitled "Glaucoma Symposium," edited by Nance and Peck, says: "Why could not the existence of pyorrhea and blind abscesses about the roots of the teeth be the source of the toxic factors mentioned by Fischer? Hence the suggested association of the dental surgeon with the ophthalmologist in these cases of apparently idiopathic increased intra-ocular tension. It would be well to state here a cursory examination of the mouth will not discover abscesses. * * * A careful examination of each tooth, together with radiograms of the entire maxilla, are absolutely essential to determine their presence or absence."

The firm pressure that is sometimes created in the nose by a cystic middle turbinate, or by a pronounced deviation of the septum in the region of the middle turbinate, may be responsible for neuralgic pains not unlike in character or location to those of dental origin. Accordingly, every case of neuralgia of obscure origin where the teeth have been excluded as a factor by a competent dentist ought to be referred to the rhinologist. Likewise, every case of neuralgia coming to the rhinologist where the nose has been excluded as a factor ought to be referred to the dentist.

Gentlemen, I have merely touched upon some of the more common conditions which call for the co-operation of the dentist and the eye, ear, nose and throat specialist. Many others might be cited. My main object, however, in bringing the subject before you is to stimulate an interest in scientific medicine including dentistry. I believe that the time has come when dentistry should be recognized as a specialty in medicine the same as that of the eye, ear, nose and throat, and the dentist should receive the same general medical education and privileges as he who practices any of the other specialties. By so doing we shall advance the science of medicine generally.

1831 Chestnut Street.

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ABSTRACTS

NOSE AND THROAT.

67. **Intubation apparatus and tubes for the treatment of chronic stenosis of the larynx.** Dr. Lynah has applied the principle of the bivalve speculum to a short laryngoscope for dilating the larynx. The lower blade corresponds to a heavy tongue depressor that can be slipped on down into the larynx. The upper blade is hinged and the blades are separated by a set screw. With this speculum can be introduced into the larynx directly the dilating tubes, which are cigar-shaped, with or without built up ends.

The relative frequency of laryngeal stenosis deprives Dr. Lynah of much opportunity to use his ingenious instrument; however, the idea is none the less creditable.

68. **New instrument for the removal of adenoids.** M. M. Cullom.—This is another curette with a trap on it to catch the adenoid upon removal. It has always seemed, however, that neither the removal of the adenoid piece by piece nor even the "losing of the growth" down the throat was any misfortune.

79. **Treatment of ozena by paraffin injections.** Dr. Blegvad, of Copenhagen, has tried again the old treatment for atrophic rhinitis and out of thirty cases reports only five cases improved over a period of two or three years. No amount of paraffin injected under the turbinate can restore the function of the mucosa. The stimulants to the mucous membrane give excellent results and follow a physiological rationale, while this paraffin treatment only aims to correct an anatomical fault.

80. **An indicated remedy in Saccharine diabetes.** Dr. Macfarlan reports three cases treated (the idea is new and original with him) with the patient's own potentized blood. This was run up to the 6X in water for the first and second cases and to the 10th centesimal for the third, and taken, a dose every two hours. In each case

the glycosuria was diminished (disappeared in Case 3) and the patients felt better otherwise. A simple and practical treatment that evidently is worth an extended trial. In Case 3 the potentization was on the Hahnemann scale, centesimal, with a hundred hard hand-shakes with each dilution. It is hoped that in further reports the quantity of urine be given with its specific gravity and also the 24-hour amounts, respectively, of the sugar, urea and (when present) albumin.

81. **The tonsil and certain systemic conditions.** M. E. Hopkins.—Until recently it was thought the tonsils were infected only through their surface. Frankel, of Berlin, injected coloring matter into the nasal mucosa and after a time found it in the tonsils of both sides.

Tubercular and other infection enters the tonsils which attempt to overcome the invaders—their protective characteristic against bacteria is definite. Billings thinks there can be no other reason for the prevalence of rheumatism in childhood than the frequency of infections in the nose and throat. The author had a woman 54 years old (no previous history of rheumatism) develop acute rheumatic fever, with swelling of all the joints of the extremities, three weeks after acute superficial tonsilitis with severe edema of the soft palate and uvulva. Acute superficial tonsilitis in a child 11 years old was followed by torticollis. A girl of 25 developed a fever with pain and swelling of the feet and acute endocardial symptoms ten days after an attack of sore throat, with a large white patch on an amputated (?) tonsil involving the hypertrophied remaining tonsil; here there was history of previous tonsilitis and an operation.

EYE.

1. **Complete disappearance of an eyeball following a birth injury.** The patient was eight years old and born of a primipara. Forceps were used at delivery and the eyeball was injured. The mother says the cornea and iris had the same appearance and color as the other eye shortly after birth, but a shrinkage of the eyeball took place rapidly. The eyeball has completely disappeared, no remnant or stump remaining. The orbit has the appearance of having had surgical interference. The lids and orbits are perfectly normal and that side of the face is fully developed.

3. **A tumor of the eye presenting unusual features.** A Hindu

female of 14 years was admitted to the Madras Government Hospital in February, 1913, with a history of a slight protrusion of the left eyeball, first noticed nine years previously. This developed a tumor which gradually increased in size until one year ago; since then the tumor has not grown appreciably.

The eyelids could not be closed after the first year. Later ulceration occurred and the eye could not be recognized as such.

The tumor projected from the left orbital cavity and was enormous in size. On removal it was found to be an enormously distended eyeball, egg-shaped, and measuring 119 mm. from before backward, 75 mm. laterally and 80 mm. vertically.

The extra-ocular muscles were extraordinarily hypertophied. The optic nerve at its entrance to the tumor measured 10½ mm. in diameter. On sectioning the tumor the anterior portion consisted of a yellowish mass with fibrous bands coursing it, and suggested an enormous lens. The posterior ⅗ consisted of what looked like cavernous tissue.

8. **Sclero-corneal trephining in operative treatment of glaucoma.** Colonel Elliot recommends the operation of trephining for all cases of glaucoma, acute and chronic, except (1) glaucoma secondary to cataract; (2) conditions (exagr. traumatism) in which there is known to be free communication between the aqueous and vitreous chambers. The preparation of the patient and the steps of the operation are carefully described. The possible accidents during and after the operation and the after-care are also thoroughly emphasized.

30. **Congenital cataract.** Dr. Clark advises the early removal of congenital cataracts by the rapid linear extraction instead of the slower and less radical method of needling. He places the patient in the hospital, performs a free division of the capsule and stirs up the soft lens substance at the first operation. The patient is kept in the hospital under close surveillance and at the opportune moment a linear extraction is performed in which the softened lens substance is removed; then irrigation of the anterior chamber with normal salt solution. He cites the case of a German woman who came to him when 18 years of age with well advanced cataracts of both eyes.

Operation was performed and good vision obtained.

The patient married and four of her six children had cataracts. They were all operated by the linear extraction method and good results were obtained.

The records of two other cases of congenital cataract where early operation was performed are given.

31. **Report of an unusually large mucocele of the frontal and ethmoid cells—Operation and cure.** A woman sixty-nine years old with a large mucocele which proptosed the left eye downward and outward, without any inflammatory symptoms or appreciable derangement of vision, was seen by Dr. Posey. The size of the tumor was equal to that of a hen's egg. An operation was performed and the tumor which occupied the left frontal sinus was removed. The inferior wall of the sinus had been removed by erosion; the periosteum offered the only protection to the cranial contents. The ethmoid cells were found distended. After the operation the eye receded and healing was uninterrupted. One week after the tumor was removed the anterior ethmoidal cells were opened after the method of Mosher, and the anterior end of the middle turbinal was amputated.

35. **Hydrophthalmos following trauma—Report of a case.** Dr. McGuire reviews the literature of the etiology of hydrophthalmos. While hydrophthalmos is considered as congenital, one author refers to a case as following ophthalmia neonatorum and another refers to it as a late development of a penetrating wound of the cornea.

The author cites a case in his experience of a boy four years old who received a penetrating wound of the cornea and rupture of the anterior capsule. A cataract developed, which was soon absorbed without any serious evidences of inflammatory symptoms or increased tension.

Six months later it became apparent that the corneal dimensions were increasing and that there was a slow but progressive enlargement of the globe. There was some increase in tension. After a few months the anterior chamber became deepened and the iris atrophic and tremulous. Two years later the condition was so far advanced that perception of light was doubtful. Several operations were tried in an effort to control the pain and vision, but finally an enucleation was done on account of the increasing painful condition of the eye.

37. **Electrolysis in the treatment of trachoma and its sequel.** Dr. George uses the method of electrolysis as first introduced by Neiswanger. A specially devised copper electrode with a smooth olive-shaped tip is used, attached to the positive pole of the galvanic current. Local anethesia is produced, and in the treatment the elec-

trode is kept under constant motion while it is being applied to the whole extent of the superior conjunctiva. Five m.a. current is applied for three to five minutes.

38. **A case of complete bilateral iridiremia in a child whose father has bilateral coloboma of the iris.** Dr. Lewis reports an interesting case of a boy eleven months old and normal except for ocular defects.

Both eyes are normal extra- and intra-ocularly, except for an entire absence of both irides. There are evidences of greatly reduced vision and considerable photophobia is manifested in bright solar light.

The father of the child has a peculiar bilateral coloboma of the iris which affects the nasal side of each iris, about two-fifths being absent.

The family history is negative except for a possible suggestion of lues in the paternal grandparents of the child.

39. **The report of an unusual accident which caused the loss of an eye.** The report of Dr. Kollock is interesting more from the principles of physics than the side of the oculist. The patient was shooting at a bell which was suspended in a tree. A bullet fired from the patient's gun struck the bell and returned along the same path and entered the aiming eye of the shooter.

Retinitis punctata albescens et pigmentosa. von Dr. Martha Diem in St. Gallen (Schweiz.)—Retinitis punctata albescens in as exceptionally rare disease. Lauber, in 1910, collected from the literature fifteen published cases of this disease. In the case reported by Dr. Diem a peculiarity is the fact that in one eye two distinct diseases are present—Retinitis pigmentosa and Retinitis albescens. Another point of interest to support the theory that retinitis pigmentosa and albescens are closely related is the fact that these two diseases may be present in different members of the same family. From a study of the literature Dr. Diem finds that Wustefeld (1910) reports a case where an eight-year-old girl had retinitis albescens, whereas her six-year-old brother had retinitis pigmentosa. Nettleship also reports a case where in a family of twelve the oldest member had retinitis pigmentosa, while the two younger members had retinitis albescens. Again, there are but two or three known cases in the entire literature where these

two diseases have occurred in the same eye. For example, Gayet describes the fundus of a thirteen-year-old girl where in the region of the papilla and macula a typical picture of retinitis albescens was present, while in the periphery retinitis pigmentosa was present.

In Oeller's atlas, series 1908-1910, are two ophthalmoscopic pictures which the author describes as retinitis pigmentosa and punctata albescens. Lauber groups the collected cases of retinitis albescens into three groups, depending on whether the case ran a benign or malignant course. Of the third group Lauber says, "hier kommen haüfiger pigmentierungen vor, die vielfach an die Retinitis pigmentosa eriennen."

Dr. Martha Diem's case was the following: Anamnesis—The father of the patient had retinitis pigmentosa; father's brother also had same ocular condition and was in a blind asylum for some years. But in both these cases there were no white spots encircling the macular regions. A peculiarity of these cases was that neither complained of night blindness (Nettleship has collected a series of retinitis pigmentosa where night blindness was absent—Marlow, Hutchinson, Auche).

Parents of the patient were not related. Patient was eighteen and a half years old when she came to Dr. Diem, October 16, 1913, to have her glasses changed.—*Klinische Monatsblätter für Augenheilkunde*, September, 1914. F. O. Nagle.

SOCIETIES

ANNUAL MEETING OF THE O. O. AND L. SOCIETY

ANNOUNCEMENT

THE annual meeting of the O. O. and L. Society will be held in Chicago, June 28 to July 3, 1915. Headquarters will be at the Hotel Sherman.

A happy combination of arrangements brings the American Institute to meet at the same time and place and in the same hotel, where all sessions of both societies will be held.

The officers of the society wish to assure the entire membership a pleasant and profitable week. The program is almost complete and

teems with good things. The entertainment will be abundantly provided by our Honorable ex-President, Burton Haseltine. An unusual feature is already assured, viz.: A large clinic in the new two-thousand-bed Cook County Hospital, conducted by the members of the regular staff.

Fellow members, we shall taboo the time honored custom of inviting you to this meeting. An invitation is out of order. It is your meeting; your society. You are supposed to attend; you cannot afford to not attend.

The following partial list of papers furnishes some of the reasons why you cannot afford to miss the meeting:

"The Value of Proper Care of Eyes During Childhood and Adolescence," by G. R. Reed, M. D., Cincinnati.

"Head Hemorrhages," by Fred C. Sage, M. D., Waterloo, Iowa.

"Wood Alcohol Amblyopia," by James A. Campbell, M. D., St. Louis.

"Fusion, an Important Factor in Ocular Efficiency," by George A. Shepard, M. D., New York City.

"The Treatment of Keratitis and its Sequelae by High Frequency Current," by W. E. Boynton, M. D., Chicago.

"Demonstration of my New Conception of the Ocular Movements," by Edgar J. George, M. D., Chicago.

"Accidental Cyclodialysis," by D. W. Weaver, M. D., Greensburg, Indiana.

"The Ocular Symptoms of Multiple Sclerosis," by F. O. Nagle, M. D., Philadelphia.

"Glioma of the Retina with Report of a Case," by Joseph E. Sternberg, M. D., Boston.

"A Middle Ear Case with Complications," by W. B. Kreider, M. D., Goshen, Ind.

"Word Deafness; Two Cases," by E. D. Brooks, M. D., Kalamazoo, Mich.

"Applied Anatomy of the Temporal Bone with lantern demonstration," by Gilbert J. Palen, M. D., Philadelphia.

"The Comparative Anatomy of the Eye with lantern demonstration," by Thomas M. Stewart, M. D., Cincinnati.

"Results of Tonsil Operations," by J. W. Patterson, M. D., Kansas City, Mo.

"The Relation of Nasal Disease to Headache," by Everett Jones, M. D., Boston.

"An Improved Sub-Mucous Operation," by F. B. Kellogg, M. D., Los Angeles.

"A Rare Case of Cerebellar Abscess," by Burton Haseltine, M. D., Chicago.

"Home versus the Hospital in Some Eye Maladies," by H. W. Champlin, M. D., Towanda, Pa.

"A Case of Soft Cataract: Extraction of Capsule," by G. N. Seidlitz, M. D., St. Louis.

"Hemianopsia," by Grant S. Peck, M. D., Denver.

"A Review of Cleft Palate Operations," by C. C. Collier, Chicago.

"The Lingual Tonsil in Relation to the Singing Voice," by Thomas D. Shearer, M. D., Baltimore, Md.

"Some Observations on Ophthalmic Teachings," by C. D. Metzger, M. D., Pittsburg, Pa.

"A Simplified Operation for Making an Artificial Pupil in Seclusion Pupillae," by Philip Rice, M. D., San Francisco.

"Glaucoma, a New Theory as to its Cause and Pathology," by C. A. Harkness, M. D., Chicago.

"Some Mooted Mastoid Questions," by Alfred Lewy, M. D., Chicago.

Dean W. Myers, President, Ann Arbor, Mich.
I. O. Denman, Secretary, Toledo, O.

PRE-SESSIONAL ABSTRACTS

VALUE OF PROPER CARE OF EYES DURING CHILDHOOD AND ADOLESECNCE

G. R. Reed, M. D.

The writer traces the growth of the eye through its various stages, and calls attention to the difference in time between the beginning of structural development and that of functional development; also notes the lack of consideration usually accorded the eye, in contrast with that given the rest of the body. He gives the history of a case to illustrate what results may be obtained by the use of natural and artificial means combined, in both structural and functional development.

HEAD HEMORRHAGE

Fred C. Sage, M. D.

While dangerous cases are comparatively infrequent, the surgeon should always be thoroughly prepared to handle the worst case. Absence of severe hemorrhage in throat surgery seems proportionate to amount of skill used in operation. Variety of tonsil separators indicate difficulties of operators. Unavoidable accidents in throat operations. Haemophilia furnishes a preponderance of severe cases. Its treatment before and after operation, including newer therapy. Special remedies. Local measures. Spontaneous nasal hemorrhage and the choice of method of packing. General considerations and cases.

FUSION AN IMPORTANT FACTOR IN OCULAR EFFICIENCY

G. A. Shepard, M. D.

The writer makes a plea for a better realization of the importance of a well developed Fusion function and the need of making test of its strength.

Judgment as to what cases will respond to treatment depends upon several factors which can be learned only by careful observation of the individual. Although it is possible to develop the Fusion sense at any age, it is not always expedient to make the attempt. A patient with power of concentration or intelligence will become wearied and discouraged before much has been accomplished. Therefore, at first, cases should be selected in reference to the mental equipment with which the operator has to work rather than the degree of ocular fault.

In developing a Fusion consciousness all means should be used, mechanical, argumentative and psychic.

The general plan of attack is much the same in all cases, but superficial variations have to be made to suit the temperament of the individual.

DEMONSTRATION OF MY NEW CONCEPTION OF THE OCULAR MOVEMENTS

Edgar J. George, M. D.

Demonstration (special prepared models) of my new conception of the ocular movements. The contention is that the true movement of the eye is oscillation and not equatorial rotation, that the macula lutea is stationary at all times, and is the center or pivotal point upon which all movements of the eye are directed.

ACCIDENTAL CYCLODIALYSIS

D. W. Weaver, M. D.

Report effects of a blow to eye—hemorrhage in cornea and anterior chamber, tension, detachment of ciliary body and iris for a distance of 4 mm., and results.

SOME OBSERVATIONS ON OPHTHALMIC TEACHING

C. D. Metzger, M. D.

1. In the General Medical Course:

(a) New demands—a theoretical and superficial knowledge of any special organ now insufficient.

(b) Keenness in development of the special senses as an important educational factor is coming to be appreciated by the laity, and they seek intelligent advice from the family physician concerning them.

(c) Every physician should be acquainted with the simpler functional eye-tests and thus be able to advise wisely as to further care.

2. In Special Courses:

(a) A thorough fundamental knowledge must be assured. This requires time and attention to theory and practice.

(b) Home methods compared with foreign.

(c) Some strong and weak points in English and German courses.

3. A need of special emphasis on teaching ocular physiology and hygiene.

GLAUCOMA, A NEW THEORY AS TO ITS CAUSE AND PATHOLOGY, WITH A SUGGESTION AS TO TREATMENT

C. A. Harkness, M. D.

The most prominent symptoms are increased tension and pain.

Three causative factors considered: (a) Increase in the fluids in the eye. (b) Hardening of the sclera with a shrinking of the tissues (c) A blocking of the exit of the fluids and where this blocking occurs. Generally believed that this blocking is in the canal of Schlemm. The clinical findings and laws of physics indicate that this is not the primary cause, but is a secondary result of pathology elsewhere.

Histology of the aqueous and vitreous discussed in the light of recent knowledge and laboratory tests. The anatomy of the lens is also considered as contributing to the disease.

The various treatments and their results are used to prove that

the real cause of the increased tension is to be found in the posterior chamber of the eye.

Opening of the posterior chamber and transplanting a portion of the external rectus muscle in the opening suggested as a new treatment.

SOME MOOTED MASTOID QUESTIONS

Alfred Lewy, M. D.

Some of these questions are: The time for operation; method of reaching the antrum; whether or not antrum should be curetted; the blood clot closure; the packing method; general remarks.

CORRESPONDENCE

March 23, 1915.

Dr. Geo. W. Mackenzie,

Editor O. O. and L. Journal.

Dear Doctor:—

In the last line on page 265 of the March number of this Journal we read the words: "How about the nose and sense of smell?" I cannot quite make up my mind whether the author of these words is trying to perpetrate a joke or asking for information. But, whichever is the case, it is all right. I am not in the least bit sensitive about having a joke played on me, nor have I any hesitancy in explaining, or trying to explain, the meaning of a statement of mine which has been left a little hazy.

"Now, if the statement "That the contour and proportions of the body depend on the development of the organs within" is true, how about the nose and the sense of smell? Of course, if we clearly understood each other as to the meaning of the word "nose," I might be able to answer the question more comprehensively. "Nose" stands for considerable; and a very considerable that has no relation to the sense of smell whatever. In fact, it is something of a question whether the nose has anything to do with the sense of smell further than that the organ of the sense of smell is located in the nose.

Does my questioner infer from my statement that I am saying that big nose means "big smell," and little nose "little smell"? If the sense of smell were a function of the bony frame of the nose there would be some reason in the question, but this is not the case. Size of

nose is simply an indication of the size of the bones which go to form the nose and has no more to do with the sense of smell than has the size of the ears. Does size of ears have anything to do with keenness of hearing?

The sense of smell is a function of the nerve of smell, and its acuteness depends upon the degree of development of the nerve and its integrity. Assuming then a perfectly sound nerve, isn't it reasonable to conclude that a well-developed nerve is capable of a more vigorous function than a poorly developed one? Surely so. If not, then the teachings of biology are a farce, of physiology a falsehood, and of anatomy a joke.

But I may now be asked, how is a person going to determine the size of the olfactory nerve? This is not at all difficult. Development of the olfactory nerve is in direct relation to the development of the nervous system in general. A highly developed nervous system is indicated by a relatively larger cranium, fine skin, fine hair, thin nails, and, what is not generally known, by a relatively longer spine. The opposite physical development—coarseness of fibre, etc.—indicates a lesser development of the nervous system; duller sensibilities. The former type of person will walk around the block in order to avoid passing a scavenger's wagon, the latter lives and thrives on it. The former must quickly resort to a bottle of eau de cologne if there is the least bit of a bad smell about, the latter simply does not smell it.

Oh! it is not necessary to take a pair of calipers and measure the nerve of smell in order to arrive at a reasonable conclusion as to its size, and much less an indication of sense to measure the nose. All we have to do is to learn and believe as a fact the teachings of biology, physiology and anatomy.

Very sincerely,

PHILIP RICE.

Physicians' Building, San Francisco.

Directory of Homoeopathic Physicians in Greater New York and Vicinity. 1914. Vol. XXV. Cloth. 206 pp., 7¾ x 5 x ⅜". $1.00. Owned and edited by W. M. Conrow, M. D., 31 Maple Street, Springfield, Mass.

As usual, The Red Book Directory is late—we do not remember it ever being so late—March, 1915—but the blame for this belongs not upon the editor but upon the profession, and largely upon the officers of societies and institutions. The editor has not told us how many doctors are listed, and the reviewer will not take the trouble to count them; we are told that 35 new names appear and 52 have been dropped, of which "at least 24 are deaths." In Brooklyn alone three dead men are still listed—Drs. Nichols, Sidney Smith and Sutton. The book is valuable for the extended data given of the homoeopathic physicians in New York State, through Long Island and as far as Middletown and Albany, all New Jersey and Connecticut. Data are also given of many of their institutions, societies and clubs.

J. L. M.

Edema and Nephritis. By Martin H. Fischer, M. D., Eichberg Professor of Physiology, University of Cincinnati. *Second and enlarged edition.* Cloth. Illustrated. 695 pages, 9⅛ x 6⅛ x 1½". $5.00. New York: John Wiley & Sons, Inc. London: Chapman & Hall, Ltd. 1915.

This critical, experimental and clinical study of the physiology and pathology of water absorption in the living organism is a combination of the author's prize essays upon Edema and Nephritis amplified and brought up to date.

"The cause of edema lies in the tissues—*the absorption of water by living matter is determined by its colloids.*" "*Glaucoma is a local edema.*" Our author demolishes the osmotic, the lipoid membrane and the pressure theories of edema; he seems to have established his "colloid-chemical theory"—but cautions his readers that "we are still too strongly under the influence of the *purely chemical* point of view, it is likely to be carried too far."

Fischer's conception of the cell—i. e., of protoplasm—is a mass of protein intimately mixed with more or less fat-like material (the fats and lipoids) immersed in a liquid from which the protein-fat

mixture takes up a certain amount of water as well as a certain amount of its dissolved substances. The water absorption is governed by the state of the (hydrophylic) emulsion colloids. The absorption of the dissolved substances is a matter of equilibrium between the concentration of those found in the medium outside the cell and that of the same substance found in the cell itself.

It is well to remember that emulsion colloids—lyophilic or hydrophylic—are those which enter into close association with and hold much of the solvent, they are formed by the mixture of two liquid phases. This class of colloids is of the greatest biological importance, for the bulk of protoplasm is made of it; it includes fibrin, albumin, blood serum, cellulose, et al. Suspension colloids (the other class) are formed by the mixture of a liquid and a solid phase; these, also called lyo- or hydro-phobic, have but little or no solvent; e. g., the colloid metals, metallic hydroxils and sulphids, silicic and tungstic acids.

Fibrin (as do all proteins) *absorbs more water* (swells more) *in any acid solution* than it does in pure water. The amount absorbed increases with the concentration of the acid, except that beyond a certain concentration the fibrin swells less than in lower concentrations.

The addition of any salt reduces the amount the fibrin (protein) swells, this in proportion to the concentration of the salt. Citrates (particularly the ferric and cupric, but practically the sodium) have the greatest dehydrating effect. Sugars have this power in the presence of either an acid or an alkali. Urea can increase the hydration of protein, maybe not quantitatively, but probably this is important qualitatively.

Edema consists of swelling due to a greater hydration capacity of tissue colloids (in the presence of an adequate supply of water) than that which we are pleased to call normal. This is usually caused by acidosis, but sometimes by urea, pyridin, certain amins or the conversion by ferments of colloids to those having a greater capacity and affinity for water. For practical purposes it may be said that in all edemas, general or local, the tissues are abnormally acid. This acidity may be due to (1) formation or accumulation of acid (carbonic, lactic, formic); (2) impaired circulation; (3) oxygen starvation—decreased oxygen carrying power of the blood; (4) carbohydrate starvation; or (5) post-mortem chemical tissue change.

Dehydration of protein colloids diminishes edema. Sugars dehydrate the body proteins (hence are diuretics); this helps explain the diabetic's dryness of tissue, thirst and polyuria. The fluids of anasarca and ascites, etc. (transudates), are dilute solutions of protein "squeezed off" by more concentrated and solid ones, the edematous tissues; this is analogous to the syneresis exhibited by colloids (e. g., gelatin, silicic acid) on standing a while.

The distribution of any dissolved substance between any three phases—as blood, kidney substance and water (the original urine)—is a matter of equilibrium, the point of which may be shifted in either direction depending upon the solution properties, the absorption characteristics and the chemical nature of the three phases. The kidney does work when secreting water, oxidizes various materials in the kidney, hence available oxygen and water are both necessary. Fischer questions the existence of "secretory" nerves, they are vasomotors. Vasodilatation may occur without secretion, but only when defectively oxygenated blood is supplied. Why does the blood remain in the blood vessels? Because its water is not free, but is bound to its colloids. Intravenous saline injections increase the blood pressure only temporarily because they consist of free water which leaves the body in the secretions or is sucked into the tissues.

"The changes which characterize nephritis are colloid-chemical in nature and due to a common cause—the abnormal production or accumulation of acid, or other colloid hydrating substance, in the cells of the kidney. . . . The alleged consequences of kidney disease, such as edema, high blood-pressure, uremia, are not consequences but accompanying conditions. . . . Actually," says he, "nephritis is in good part an edema of the kidney." Albuminuria and granular casts are due to the fact that acid acting upon protein makes it not only swell but go into solution.

For nephritis, cerebral edema, glaucoma, give alkali, salts, water and dextrose. A protein diet yields after oxidation in the body, about 25 per cent of acid; a vegetable and fruit diet under the same circumstances yields about 25 per cent excess of alkali. Avoid foods high in mineral acids or in those organic acids (benzoic, oxalic, tartaric) which cannot readily be oxidized in the body to carbonic acid—unless sufficient alkali is also taken to neutralize those acids. Keep the urine neutral. Give water day and night; this does *not* materially increase

the work thrown on the heart. The objections to the use of water are: (1) when the hydration capacity of the body colloids is increased, giving water makes their swelling possible; (2) pure water washes out of the kidney tissue not only the poisonous matters but also various substances we should keep. Hence to avoid these bad effects add to the water a sufficient amount of the properly chosen salts—a hypertonic salt with an alkali. While this is being given by rectum the patient must not drink pure water, beyond merely wetting his mouth to relieve thirst.

Fischer's solution is

Sodium carbonate ($Na_2 CO_3 10H_2 O$).....10 grammes
Sodium chlorid.....14 "
Distilled water enough to make.....1000 c.c.

Care must be taken in its preparation, more so (of course) if for intravenous injection than when for slow rectal use.

Forty-four pages are devoted to *Glaucoma*, which, Fischer teaches, *is pathologically a local edema** due to increased hydration capacity

*As we noticed editorially in October, 1912.

of the colloids of the eye; most commonly there is an accumulation of acid in the eye, but it may be of some other similiarly acting substance.

Obliteration of the filtration angle is a sequence, not the cause, of increased tension, and is explained by the greater swelling of posterior eye colloids (sclera, choroid, vitreous). The anterior colloids, cornea and aqueous, are not capable of so much swelling. Crowding of the ciliary body against the sclera embarrasses its circulation and thus (with the consequent lack of oxygen, accumulation of carbonic and other acids, etc.) increases the local acidosis and edema.

The best *local* treatment for glaucoma is the subconjunctival injection (preceded by cocain-adrenalin) of 5 to 15 drops of 4.05 per cent or a 5.41 per cent solution of sodium citrate.* More or less pain

*Only the chemically pure salt (made by Kohlbaum) should be used.

ensues for a few minutes, which may be helped with hot and cold compresses. The stronger solution is used for severe attacks, the weaker for mild attacks and in following up the stronger dose mixed with a 2 to 4 parts of a "physiological" (0.9 per cent) saline solution. These solutions should always be fresh and sterile, as bacteria readily decompose them.

Each sodium citrate injection is promptly followed by a fall of intraocular tension—possibly to subnormal—lasting three to six days or until another attack. But the real cure of glaucoma necessitates that "*we must treat the whole man*" (hence the consideration given in this review to the general subjects), "no local treatments will suffice in themselves."

Fischer considers "the problem of glaucoma and its treatment is identical with the problem of nephritis, or cerebral edema. A diagnosis of 'glaucoma' is as complete (and up to date) as one of 'dropsy'; as modern medicine is not content with the latter, it will not long remain so with the former."

In a very gentlemanly way our author suggests that "it might be well to inquire why" his critics failed with the sub-conjunctival sodium chlorid injections (he never has); he finds men constantly modifying the concentration or the amount of injection to suit themselves.

Dr. Fischer now urges, and for the past two years has relied chiefly upon, slow rectal enemata of an alkaline hypertonic salt solution before (when practicable) resorting to subconjunctival injection even of sodium citrate. This "not alone because glaucoma is so often but a local expression of a general state," but because some observers have reported uniform unsuccess with the citrate, and because the proper use of salt and alkali per rectum has proven so satisfactory. Because in severe glaucoma the hydration capacity of the ocular colloids is exceedingly high, it may happen that a subconjunctival injection will increase tension by its water being absorbed before the salt enters the eye—this from our failure to get the citrate into the eye in sufficient concentration, or to the fact that there is great general acidosis from a weak heart, starvation, overwork, etc.

Corneal opacity and cloudiness of the clear media dependent upon glaucoma are produced by precipitations of protein of the nature of casein. The clouding thus caused by the precipitation of one type of colloid while another is swelling, together make glaucoma but another example of the widely observed "cloudy swelling" of the pathologists.

A very important and very interesting book that we commend for careful study by every sincere practitioner, whether general or special. The publishers have done their part more than "well"—barring two or three slight unimportant typographical errors. J. L. M.

NEWS ITEMS

Dr. G. J. Palen, of Philadelphia, gave an address to the student body of Hahnemann College, Chicago, March 22nd, on the present status of the homoeopathic school.

Dr. Willard Thompson has completed his special courses in Philadelphia and is now attending eye and ear clinics in Chicago. He will give his entire time to special work in the future.

Dr. John E. Guy, of Milwaukee, attended the home-coming day of Hahnemann College of Chicago on March 8th.

The Chicago members of the O. and O. Society entertained Dr. Gilbert Palen at the Chicago Athletic Association on March 23rd.

Dr. C. J. Beeman, of Grand Rapids, has recently been attending special clinics in Chicago.

The preliminary organization of the Chicago Graduate School of Medicine has been completed and courses in all departments of medicine and surgery will be given during the coming winter. All the Chicago members of the O. and O. Society will be upon the teaching corps.

The Stall Medical Society, old school, meets at Waterloo, Iowa, this year, May 12th, 13th and 14th.

The Hahnemann Society meets at Des Moines. Dr. F. R. Titzell, of Iowa City, is President.

Dr. Fred C. Sage was re-elected member of the Waterloo Board of Education for his third term at the March election.

Dr. G. G. Bickley, of Waterloo, who has been suffering from a severe hand infection, has recovered sufficiently to resume his practice.

Dr. Carl Bickley will drive to New York City with his family this summer in his new Cadillac Eight.

Dr. E. H. Beckmon operated at the Presbyterian Hospital, Waterloo, in February, removing an enormous goiter successfully. A large clinic of local surgeons was present.

The composition of glyco-heroin (Smith) is not being changed to meet any of the exemptions or privileges allowed under the so-called "Harrison Anti-Narcotic Law," and whereby it might be sold to the public. Glyco-heroin will remain just what it always has been, and just what it was always intended to be, viz.: A stable, uniform and dependable product for the convenience and use of physicians only, in the treatment of cough, bronchitis, whooping cough, etc. In prescribing glyco-heroin use ordinary prescription blanks. Give the name and address of patient, your own name and address in full, your registry number and date when written (no copy or other record required). Prescriptions cannot be refilled.

THE JOURNAL OF OPHTHALMOLOGY OTOLOGY AND LARYNGOLOGY

CINCINNATI, OHIO

Editor: DR. G. W. MACKENZIE

Associate Editor for June: CHARLES DEADY, M. D.

CONTENTS FOR JUNE, 1915

EDITORIALS

Page

Post-Graduate Instruction 465
The College of the New York Ophthalmic Hospital. By Charles Deady, M. D..... 466
The Use and Abuse of Drugs..... 468
Announcement 470

ORIGINAL CONTRIBUTIONS

Some Experimental Investigations Concerning Intra-Ocular Pressure. By William McLean, M. D..... 471
Corneo-Scleral Trephine after the Elliot Method for the Reduction of Intra-Ocular Tension. By De Wayne Hallett, M. D... 478
On the Management of the Lens When Accidentally Dislocated Into the Depths of the Vitreous During Extraction of a Cataract. By Charles H. Helfrich, M. D..... 485
The Value of the Ophthalmometer. By Edwin S. Munson, M. D.. 488
A Case of Retinal Hemorrhage With High Blood Pressure Apparently From the Excessive Use of Tea. By Charles Deady, M. D..... 490
An Improved Technique in Forming a Support for an Artificial eye. By F. G. Ritchie, M. D..... 492
A Case of Metastatic Choroiditis. By Charles C. Boyle, M. D.... 496
Refraction of Mentally Defective Children. By M. B. Beals, M. D. 500
Atypical Mastoiditis. By L. E. Hetrick, M. D..... 505
Euonymin in the Treatment of Diseased Conditions of the Nose and Throat. By Charles E. Teets, M. D..... 511
A Practical Method of Correcting Septal Deformities. By Irving Townsend, M. D..... 516
An Interesting Case of Mastoiditis. By George A. Shepard, M. D.. 520
Papilloma of the Larynx. By Robert Mortimer Jones, M. D..... 523
A New Treatment of Middle Ear Disease. By Calvin E. Williams, M. D..... 529

HOMOEOPATHIC MATERIA MEDICA AND THERAPEUTICS

Remedies in Epistaxis. By Donald Macfarlan, M. D..... 537

ABSTRACTS 539
SOCIETIES 551
BOOK REVIEW 552
NEWS ITEMS 553

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The Journal of Ophthalmology Otology and Laryngology

Vol. XXI JUNE, 1915 No. 6

EDITORIAL

POST-GRADUATE INSTRUCTION

One of the results of the war in Europe which is of considerable importance to the medical profession is the practical impossibility of obtaining post-graduate instruction in the great medical centers of the old world, whether from present inaccessibility or from the fact that the instructors are many of them engaged in the great struggle. If this condition of affairs should have something of the same result as has obtained in the commercial world and should cause our students to turn to things "made in America," it will be well. There is no doubt that such a demand can be met in this country if our schools hold their standard high enough, but it will require more intensive work on the part of both students and instructors than is common in this part of the world.

For some reason the average student in the United States does not expect to work in the same manner or with the same industry as he would in the foreign clinic. Whether the indefatigable efforts of the teacher on the other side create an enthusiasm that is lacking here, or the American student is put on his mettle in the alien surroundings to show that he is as good if not a little better than the other fellow, it is hard to say, although from remarks we have heard made by returned students the latter reason is certainly a factor in the case. On the other hand, some of our schools have clearly elevated the commercial above the scientific object, in some cases so much so that the latter has been completely hidden. The instructors are not always as attentive as they should be; any trifling interference with private business is sufficient to furnish a reason for omitting a

lecture, and the students feel that they are not receiving proper attention. In the writer's somewhat extended experience with students as an official of a teaching faculty, he has not infrequently heard the remark made of certain teaching clinics, "After they get your money it is up to you." Only recently a remark was overheard respecting a certain post-graduate institution that since the war began the school had so many students they did not take much trouble with them. That spirit can never compete with Germany.

If we are to succeed in holding the temporary ascendancy which the war has given us it must be by laying broad foundations and erecting a superstructure that is unassailable, by furnishing a thorough, comprehensive and up-to-date education in the subjects considered.—C. D.

THE COLLEGE OF THE NEW YORK OPHTHALMIC HOSPITAL

THIS institution as at present conducted began its work in the year 1879, when the Legislature of the State of New York by special enactment gave to the hospital the power to confer the degree of Oculi et Auris Chirurgus (Surgeon of the Eye and Ear) on the recommendation of the surgical staff. Before this, as far back as 1872, the board of surgeons conducted a systematic course of instruction and held yearly examinations, the successful candidates receiving a certificate of proficiency signed by the president and secretary of the board of directors and the entire teaching staff.

The degree was first conferred at the end of the session of 1879-80. Previous to this the certificate had been awarded to thirty-six physicians, among whom were Drs. Anderson and Bates, of Hamilton, Ontario; F. Park Lewis, of Buffalo; W. A. Phillips, of Cleveland; George C. McDermott, of Cincinnati, and Drs. Boynton, Buffum, Deady, Hunt, Macbride, George S. Norton and Rounds, all of New York. In the spring of 1880 the degree was conferred upon Drs. Hunt, Rounds, Boynton, Buffum, Deady and Macbride, assistant surgeons of the hospital, and upon Drs. Boyle, Eggeman and Brown, the successful candidates of that session. One hundred and ninety-one physicians hold the degree at the present time, and these are scattered

all over the world, the majority being in the United States, but Canada, the West Indies, South America, India and China all have their representatives. Our graduates have frequently been elevated to positions of importance in other colleges and, speaking generally, are men of influence in the communities they represent.

The course has always been thorough, including from the first didactic lectures on embryology, anatomy, both macroscopic and microscopic, physiology and pathology, with a full and complete consideration of the diseases of the eye, ear and throat; their etiology, diagnosis, symptoms, appearances, prognosis and the various methods of examination and treatment; a large number of clinical lectures on patients before the class, and a comprehensive presentation of the anomalies of refraction and accommodation, including both physical and physiological optics. As far back as 1876 a special quiz covering the whole course had been instituted, but during the earlier years it was an extra, and subject to a special fee. In 1903 it was made a part of the regular course without charge. Recitations were begun in 1897, when each assistant surgeon gave ten hours of this work, amounting to one hundred and fifty hours during the session, the surgeons continuing to give didactic lectures as before.

Previous to the session of 1898-9 the examinations for the degree had included only the diseases of the eye and ear, the throat course being separate and requiring an extra fee; at this session the complete throat course was made a requirement for the degree diploma without separate charge, the throat certificate being reserved for such students as came for that work only. Electricity was taken on as a part of ocular and aural therapeutics in 1900.

Cadaveric courses had been given as extras for several years, when in 1908 they were adopted as a part of the regular course without charge, and at the present time a complete cadaveric course in the eye, ear and throat is a part of the curriculum and is required of all candidates for the degree.

In 1912 thirty hours of applied bacteriology and pathology were made obligatory, and in the session now closing eight lectures, with demonstrations on x-ray technique by Prof. W. H. Dieffenbach, have been included. Two years ago all didactic lectures were changed to recitations, leaving about one hundred and twenty-five clinical lectures and demonstrations.

During the past winter we have been honored and our students have been much benefited by a special course of lectures on the anatomy, physiology, pathology and methods of examination of the internal ear, delivered by the editor of the Journal, Dr. G. W. Mackenzie, to whom many thanks are due for his able and conscientious labors in our behalf. One of our surgeons has for some time past been preparing himself for this work and his lectures on this branch will in future be included in our curriculum.

During the session just closed we have for the first time marked each student on every question in each recitation, making such marks a part of the final examination and this innovation we propose to continue in the future.

The object of the College of the New York Ophthalmic Hospital is to take the general practitioner who desires to make himself competent to practice as a specialist in diseases of the eye, ear and throat, and to fill him with as much knowledge of these subjects as he can possibly assimilate in seven months, with the privilege of working in the clinics as long thereafter as he may choose, in order that he may digest the knowledge he has accumulated during the session; this without any further charge. The institution is not a financial venture, but a labor of love on the part of the members of the staff.

Charles Deady, M. D., *Dean of the Faculty.*

THE USE AND ABUSE OF DRUGS

The positive genius displayed by our friends of the old school in overdoing what might otherwise be a good thing is a subject for wonder, if not admiration. From the earliest times every new remedy has been tried on everything in doses of all sizes, usually larger rather than smaller. Patients have been dosed with quinine until the liver and spleen were entirely out of proportion to the rest of the anatomy; they have been filled with iron to a degree which rendered an approach to a magnet a matter of serious consideration, and what has not been done with mercury it is unnecessary to refer to.

During the past few years salvarsan has been one of the most prominent preparations before the profession and has run the usual gamut in such cases made and provided. It has already produced serious symptoms in many cases and has apparently been the cause

of death in a certain number. These facts have been laid to faulty technique, to the size and frequency of the dose, and in fact to almost everything save the fact familiar to every homoeopath, that the constant saturation of the organism with a given drug over a considerable period of time will, if there is anything in the homoeopathic law, produce conditions analogous to or identical with those diseases which that drug is supposed to cure. That something of this has already been observed by our brethren of the other school is evidenced by a number of articles which have appeared latterly advocating smaller doses or longer intervals or both.

About two years ago, in a conversation with the late Dr. Bukk G. Carleton, the writer asked his opinion of the salvarsan treatment. His answer was that he saw very little difference in results between salvarsan and the usual homoeopathic methods of using arsenic except the possibility of harm from an overdose of the former.

The attention of the writer has been drawn to this subject by certain cases which have come under his observation where the remedy rather than the disease seemed to be the principal cause of the presenting symptoms. One case in particular seemed so flagrant that it was impressive. The patient, a traveling man, after coitus with a woman apparently perfectly healthy, noticed a scratch on the prepuce which oozed a trifle of bloody serum for a moment, but ceased almost at once. He gave it no further attention at the time, but the next morning, finding a small scab on the spot, was seized with the idea that he had been infected. Being in one of the Western states at the time, he visited the local physician and presented the spot for examination. At the time of the visit he was apparently a perfectly healthy man in possession of all his functions. He was told that he had syphilis; a Wasserman was taken, which was negative, and he was given several injections of salvarsan during his short stay in the town. At his next stop he went to the local physician, told his story, had another Wasserman and another negative report—also some more salvarsan. This routine was followed throughout his tour and when the writer first saw him there had been nine Wasserman tests, all negative, several of them having been made in a hospital of good reputation, and the results in each case had been more salvarsan.

For two or three weeks previous to his return he noticed an increasing difficulty in the use of his eyes, which had also been charged up

to syphilis and treated with more salvarsan.

A careful examination revealed not a sign of syphilis in any part of the body; except for one thing the man was in perfect health. That one thing was that he could scarcely see enough to get about, the vision being O. D., objects only; O. S., light only; some iritic adhesions; vitreous full of opacities and very hazy; tension minus; some deep injection; no other symptoms. A careful consideration of the history compelled the opinion that the whole condition was the effect of drugging, and accordingly the patient was put on the various antidotes of arsenic in turn and began to improve from the first. Later on electricity was used in a general way to improve the general nutrition.

In five months right vision was 15/20, left vision 15/20, three letters only. The patient afterwards removed to the South and has not been under observation for more than a year, but the last advices were that he was still in good condition.

Several cases have been seen during the last two or three years which suggested the same line of reasoning and some of them have been improved by the use of an antidote for arsenic, but nothing so positive as the one cited.

This is not presented as a case, but as an illustration of the possibilities along this line. Is it not worth while for our colleagues to keep this matter in mind in making their investigations and to report cases of this kind if found, with a view of preventing, at least in our own school, the possibility of such occurrences? It seems so to the writer.—C. D.

ANNOUNCEMENT

Dr. Gilbert J. Palen, of Philadelphia, will act as associate editor of the July issue of the Journal. His services to the Hahnemann College of Philadelphia as Professor of Otology and his association with the *Hahnemannian Monthly* as state society editor particularly fit him for associate editorship of the O. O. & L. Journal. He has spared no effort to make the July issue a success. He has collected an excellent series of papers on the tonsils prepared by some of the leading specialists of Philadelphia in our own as well as other lines. The series will be well illustrated.

SOME EXPERIMENTAL INVESTIGATIONS CONCERNING INTRA-OCULAR PRESSURE

William McLean, M. D.
New York.

THE subject of intra-ocular pressure has received considerable experimental attention from oculists and physiologists. The results, however, are somewhat varied, depending on the methods and apparatus employed by the investigators.

The usual method of determining the intra-ocular pressure has been to introduce a canula into the interior of the eye, and attach a manometer by means of tubing to the canula. Both water and mercury manometers have been employed, depending on the construction of the apparatus. A type of apparatus adopted by many of the experimentors is after the pattern of von Schulten.

Von Schulten used a mercury U-tube, one end of which was connected to the canula by means of short lengths of rubber tubing and glass capillary tubing. The level of the mercury when at rest was controlled by a vent at the bottom of the U which had connected to it compressible tubing, the amount of compression being regulated by a thumb screw.

The results obtained by some of the experimentors are as follows:

Rabbits.	Wegner	26.5	mm. Hg.
	Leber	23.5	" "
	Neisnamoff	25.	" "
	Pfluger	18.	" "
	von Hippel and Grunhagen	25–30.	" "
	von Schulten	22.5	" "
	Stocker	18–20.	" "
Cats.	von Hippel and Grunhagen	22–24.	" "
	Adamuk	24.2	" "
	Grunhagen	25.5	" "
	Holtzke	16–28.4	" "
	Stocker	28.5	" "

Dogs.	'Adamuk	19.5	" "
	von Schulten	24.	" "

In 1912 Hill and Flack reported their findings, which varied greatly from the previously reported investigations. Hill in conjunction with another had made tests previously, using the accepted type of apparatus, and reported results in accordance with other experimentors. Hill and Flack modified the canula needle and as a result of the improvement obtained entirely different intra-ocular pressures.

Previous to Hill and Flack's work an open canula or needle was used, and when it was inserted the pressure of the counterbalancing fluid of the manometer was at a point estimated to be above the intra-ocular pressure of the eye under examination. Work which I have been doing for the last two years in connection with tonometric observations, where a canula has been inserted into enucleated eyes, leads me to believe that the pressure necessary to introduce an open canula or needle is attended with sufficient momentary increase of intra-ocular pressure to more than overbalance the manometer pressure, so that a portion of the fluid in the eye-chamber receiving the canula will be driven into the lumen of the canula. Also that the straight-side canula may possibly vitiate the results.

Hill and Flack were the first to introduce a canula having a valve shut-off in the canula. Their experiments have given results enormously in excess of those quoted by others, and may be due to the fact that the valve canula had its valve opening at the periphery of the canula and thus the volume of the needle displaced a like volume of ocular fluid. They make the statement that a test was made and the volume displacement by the needle was found to be negligible. The intra-ocular pressure in cats and dogs, as determined by these two investigators, ranged from 35 to 65 mm. mercury.

In constructing an apparatus for my experimental work on eyes in situ, I tried to incorporate the good features of the apparatus used by previous investigators with improvements of my own design.

I made a canula having a tapered steel needle, the opening in the needle being on the side. The taper conformed to an angle of two degrees and had two flat sides. I made two needles, the lumen of the one used in the anterior chamber was .8 mm. in diameter. To overcome any possibility of altering the original tension of the eye by the volume of metal which was thrust into the eye, a needle valve

was interposed in the lumen just far enough back from the opening to compensate for the volume of the metal in the anterior chamber.

A half turn of the valve was sufficient to completely open the needle.

A needle with a lumen of .8 mm. I found to be too small for work in the vitreous, as it frequently became clogged. Some experimentors have used in the vitreous needles of .8 mm. and smaller, but I consider results with such small needles in the vitreous very unreliable. For the vitreous chamber I used a needle made as described above, except the lumen, which was 2. mm. in diameter.

This canula needle was connected to a thirty-inch-long glass capillary tubing by a short length rubber pressure tubing. The total volume of fluid contained in the capillary tubing was about ten minims. The other end of the glass tubing was connected by rubber tubing through a T-piece to a manometer and a reservoir.

Fig. 1.

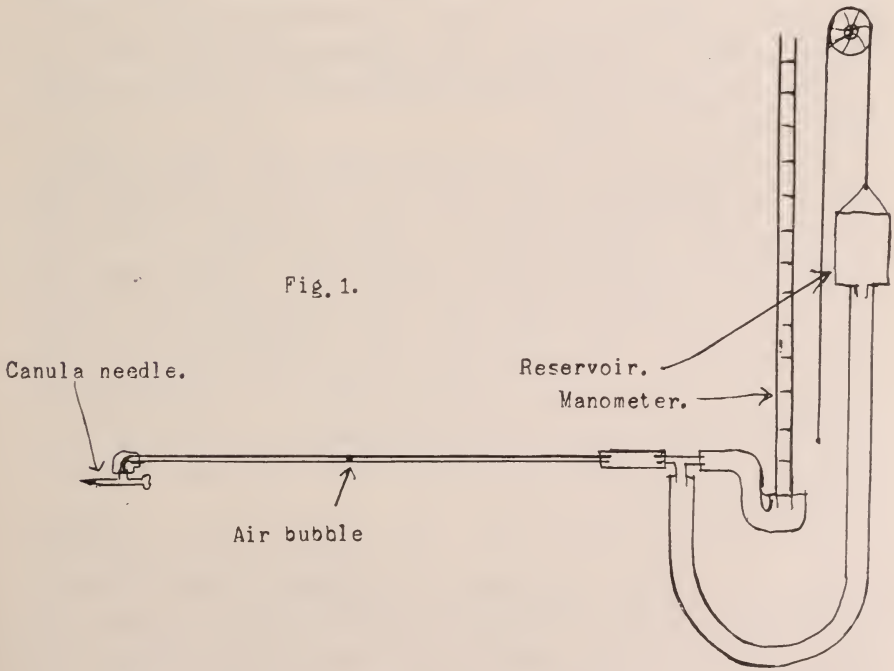
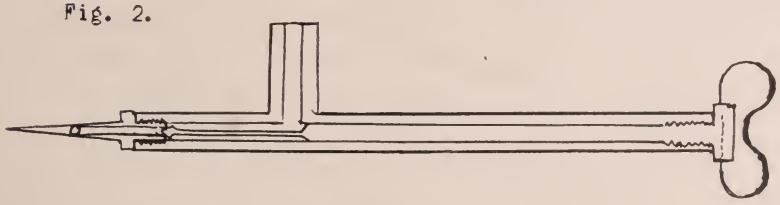


Fig. 2.



The object of the capillary tubing was to enable me, by means of a small air bubble sucked half way up the tubing, to compare and equalize the manometer and intra-ocular pressures.

A water manometer was used, but it was graduated to its equivalent in millimeters of mercury. The reservoir was suspended and was capable of adjustment as to height, in order to alter the manometer pressure at will. Fig. 1 shows a cut of the apparatus. Fig. 2 shows an enlargement of the canula needle.

In the working of the apparatus the needle was introduced with its valve closed, and the connected manometer registering the estimated intra-ocular pressure. The position of the air bubble was marked and when all was in readiness the valve was given a half turn and the movement of the bubble noted. If the bubble moved toward the manometer it indicated a greater intra-ocular than manometer pressure, and vice versa. A manometer pressure was obtained which caused the bubble to remain at, or, in case of movement, to return to its original position. A reading of the manometer was then made.

Great care had to be exercised to prevent any traction or pressure of the needle on the eyeball.

To the present time I have employed rabbits only, with the exception of one experiment on the human eye, and have obtained some interesting data. An observation was made, one which I have never read or heard of; that the Schiotz tonometer gave a marked difference in intra-ocular pressure under local, and immediately after under general anaesthesia. The rabbit was first cocainized and the intra-ocular tension determined by tonometer, then after administering the anaesthetic the tonometer was again used before any other instrumentation was done. On the human case observed the same proportion of difference prevailed.

On the human, one eye was normal and a normal tonometric reading was obtained. A diagnosis of absolute glaucoma had been made on the other eye, and the eye was being removed on account of pain. I have not made enough observations of this difference in intra-ocular tension before and during general anaesthesia to do more than merely mention it as occurring among all the tests made.

	Human		
	O.D.	O.S.	Rabbits.
Before general anaesthesia (Holocain used)....	75	19	17½
Deep ether anaesthesia.....	45	10	12

The tonometer readings were made with Schiotz tonometers. The tonometer readings of the human eye were made by Dr. Hallett. Dr. Marple was present when one of the tests on a rabbit's eyes was made and his Schiotz tonometer was used.

First rabbit: Schiotz tonometer registered 17.5 under cocain, and under ether 12. The small canula was introduced into the anterior chamber and a manometer reading of 33 mm. was made. The anaesthesia was increased and the pressure fell to 29.5, then 25, 23, 22, 22, 22.

The anaesthesia was continued and made more profound from the time the canula was inserted until a continuance of the anaesthetic failed to reduce the tension. The anaesthetic was then removed and the manometer pressure required to keep the air bubble at its mark had to be gradually increased and rose to thirty millimeters, when the animal showed signs of regaining consciousness, and the needle was removed.

The air bubble all the time showed pulsations which were synchronous with the animal's heart beat. Such pulsations are a positive evidence that there is free communication between the interior of the eye and the manometer.

Second rabbit: The tonometer during anaesthesia registered 12. The canula was inserted and the manometer registered 19.5, then 17, 16.5, 16.5. No further drop in the tension occurred and the anaesthetic was removed. The tension rose to 21.5, then 25. When the manometer had reached 25 the needle was removed on account of signs of returning consciousness of the animal.

Third rabbit: The tonometer under cocain and before ether anaesthesia registered 23. During ether 6.5. The needle was inserted into the anterior chamber and a reading of 27 mm. was made. Then it dropped to 21, 19.5, 19.5. The anaesthesia was removed and the tension rose as in the others.

Fourth rabbit: The tonometer readings were omitted. The manometer pressures were 24, 20.5, 20.5, 20.75. The anaesthetic was removed and the readings were 22, 27, 28, when the animal showed signs of recovery.

Fifth rabbit:

	Tonometer	
	Before ether	During ether
	O.D. 17	8
	O.S. 16	8

The canula of .8 mm. bore was inserted in the vitreous chamber of one eye. Soon after the needle was inserted the pulsations of the air bubble ceased, and the changes of manometer pressure were not attended with the usual quick response of the air bubble. The needle was removed and was found to be clogged with vitreous. After cleaning the needle it was inserted into the anterior chamber of the other eye. The animal was then under deep anaesthesia and the manometer registered 15 mm. mercury. At this point the animal's breathing almost stopped and the anaesthetic was removed. Artificial respiration had to be resorted to and the animal partially revived, and a manometer reading was recorded at 16.5. The animal choked with mucus before other readings were made and all efforts to restore him failed.

We were favored with an opportunity of using a canula in the human eye. The case was one of total blindness from absolute glaucoma, and the eye was being removed on account of pain. Tonometer readings were made on both eyes under holocain anaesthesia. The tension of the affected eye was 75, while the healthy eye registered 19 (Schiotz). Under ether the affected eye registered 45, healthy eye 10. A canula as described before with a bore of 2 mm. was thrust into the vitreous chamber well back of the ciliary processes. After the position of the air bubble was marked the valve was opened. It was found that a manometer pressure of about 65 mm. held the bubble at its mark. With the needle in the vitreous chamber we were able to make tonometer readings and compare them with the manometer, which readings were as follows:

Schiotz' tonometer	Manometer reading
50	65
50	65
43	64
50	66

Experiments made on this eye after it had been enucleated gave the same ratio of variance between the manometer and Schiotz' tonometer in all pressures of 10 mm. to 120 mm. mercury.

My reason for undertaking these experiments was an effort to

discover the cause for the differences in figures as reported for the normal intra-ocular pressure by the various investigators.

The only conclusion I am able to draw from this limited number of experiments is that there is a difference in intra-ocular pressure in local and general anaesthesia and where a general anaesthetic is employed the intra-ocular pressure varies with the depth of the anaesthesia.

I desire to express my appreciation for the valuable assistance rendered me by Drs. Holzapfel, Oliver and Hallett in carrying out these experiments.

CORNEO-SCLERAL TREPHINE AFTER THE ELLIOT METHOD FOR THE REDUCTION OF INTRA-OCULAR TENSION

De Wayne Hallett, M. D.,
New York.

IN the twelve cases of this operation performed by the writer at the New York Ophthalmic Hospital during the past six months the method of Major Elliot, of Madras, India, has been followed, using the bistoury to split the cornea instead of the scissors-points or the Bowman's needle of. Hingston.

Having turned down a broad flap of conjunctiva, the outer horns of which are at least two mm. from the corneo-scleral margin, and dissected the middle portion to the cornea, I find that the bistoury splits the layers of the cornea more readily and is easily seen in the cornea for a distance of about one mm.

The Elliot trephine has been used with a diameter of 1.5 mm. This size has seemed to afford ample opportunity to use the iris forceps and scissors wherever the iris was free from posterior synechia.

The disc of cut sclera has usually come away intact, but occasionally by cutting a little more on the corneal edge of the trephine a hinge of tissue still held the disc at the scleral side, necessitating the scissors. Once it prolapsed into the anterior chamber and seemed to be lost, but presented again with the drawn-out iris and was cut off while making the iridectomy.

Case 1. Tom P., 30 years. Secondary glaucoma following a syphilitic inflammation of the uvea with chorio-retinitis and gumma of the iris. As the specific process subsided the tension increased to 68 mm. Hg. Trephined December 3, 1914, with an instrument of 2 mm. size. Removal of the disc disclosed the iris adhered to the cornea far forward. It bulged but slightly into the hole and but little aqueous escaped. With forceps and scissors a small piece of iris was secured followed by prolapse of vitreous. The wound was closed and conjunctiva sutured. As in the case of two previous anterior

sclerotomies the tension remained low for several days and then the eye became hard. Vision in this eye following the specific inflammation had never been better than the ability to locate light to the temporal side. An iridectomy made downward was accompanied by loss of vitreous and a return of tension.

Later, on turning down the old flap of conjunctiva the trephine hole was found blocked with iris and plastic tissue, disturbance of which caused vitreous loss and hemorrhage into the anterior chamber. Four months later this eye presented a clear media with an atrophic central chorio-retinitis and a tension of 46 mm. Hg.

A second trephine, March 20, 1915, was made above and to the temporal side of the previous one, without vitreous loss. The iris failed to bulge into the hole and in attempting to seize it the forceps passed behind it (*i. e.*, into the posterior aqueous chamber).

It happened that an early anterior sclerotomy had left behind a small iridotomy just adjacent to this trephine hole, and I was able by use of it to get one blade of the forceps on either side of the iris and make a material iridectomy. A moderate hemorrhage into the anterior chamber soon cleared and this eye continues soft, the latest tonometer reading being 13 mm. Hg. In many ways this case was most instructive. This eye now counts fingers at six feet.

Case 2. Thomas D., 55 years. Simple chronic glaucoma in each eye.

Vision, right eye, counts fingers at two feet. Left eye has perception of light only. A typical painless case.

Tonometer readings: Right eye, 30, and the left, 31 mm. Hg.

Trephined the right eye October 24, 1914, with iridectomy. Postoperative tension 11 mm. Hg., with typical filtration bleb. The size of trephine used in this and in subsequent cases was 1.5 mm., and the suturing of flaps was discontinued.

Case 3. Herman Q., 57 years. Chronic congestive glaucoma in each eye with nuclear cataracts, the left totally blind.

Tonometer readings: Right eye, 58; left eye, 62 mm. Hg.

Trephined left eye October 24, 1914, with iridectomy. Tension, March 16, 1915, 8 mm. Hg.

Trephined right eye November 19, 1914, with iridectomy. Tension, March 16, 1915, 17 mm. Hg.

A photograph of these eyes is presented with typical filtration

blebs. Advancing nuclear cataracts render useless the records of vision and fields of vision.



Case 4. Israel Hacker, 52 years. Simple chronic glaucoma in each eye, the left totally blind.

Tonometer readings: Right eye, 61, and the left, 66 mm. Hg.

Trephined right eye December 3, 1914, with iridectomy. Tension, March 22, 1915, 12 mm. Hg.

Vision in this eye with correcting lenses prior to operation 20/50 and now 20/40+. The field of vision after operation shows no material change.

Trephined left eye January 14, 1915, with iridectomy. Tension, March 22, 1915, 16 mm. Hg.

A photograph is presented showing each eye with a typical filtration bleb. Tension, April 7, 1915, right eye 10 and left eye 13 mm. Hg.



Case 5. Jennie B., 30 years. Secondary glaucoma in right eye.

The left eye was enucleated two years previously. The right eye had a scarred and conical cornea consequent upon a former perforating ulcer. The primary cause of all was trachoma, and subsequent to the perforating ulcer a plastic external canthoplasty had been made to relieve the upper lid pressure. Other conditions left behind from the corneal ulcer were posterior iritic synechia, and a spot of anterior capsular cataract, but there were no anterior synechia.

The tonometer registered 53 mm. Hg. Counts fingers at four feet. The clearest portion of the cornea was downward and a trephine was used in this section. The iris failed to present in the hole and could not be seized with the forceps. This was disappointing, since an iridectomy was greatly desired.

Since the operation, November 19, 1914, the eye is free from pain and vision has improved till fingers are counted at eight feet. Tonometer on April 12, 1915, registers 22 mm. Hg. Photograph shows typical filtration bleb.



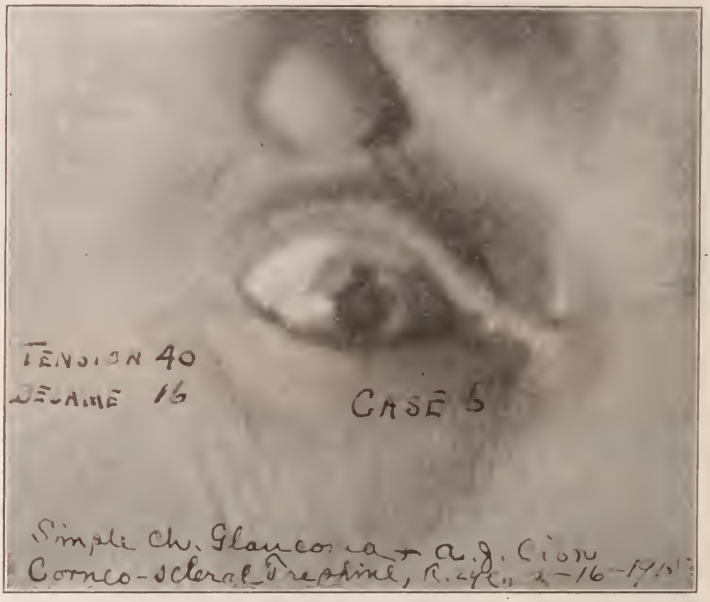
Case 6. Abraham C., 57 years. Simple chronic glaucoma in the right eye.

Vision 20/200, not capable of improvement. Tonometer 40 mm. Hg.

Left eye not apparently affected. Vision with correction 20/20 Tonometer 20 mm. Hg.

Right eye trephined February 16, 1915, with iridectomy. This eye has a developing nuclear cataract.

March 30, 1915, tonometer reading, right eye 16 mm. Hg. A photograph is presented showing a typical filtration bleb. The post-operative field measures from 40 to 70. This eye developed a quiet iritis and was under atropin for three weeks.



Case 7. Margaret H., 53 years. Acute congestive glaucoma in right eye with history of previous attacks. The left eye not affected.

Tonometer 65 mm. Hg. A blind eye.

March 1, 1915, an anterior sclerotomy was made and served to reduce tension for less than a day.

March 2nd, made a typical trephine operation with iridectomy, which failed to lower the tension for more than one day, and no appreciable effect was produced by two weeks use of miotics.

On March 18th, it being a question between an enucleation or a further effort to reduce tension and alleviate pain, a Hancock operation was made. Pain and evident signs of inflammation promptly subsided.

April 8th, the tonometer registers 21 mm. Hg. The pupil remains quite dilated and apparently fixed. The trephine area presents no appearance of filtration.

Case 8. Mary M., 29 years. Chronic secondary glaucoma in left

eye. Eleven years previously, having 26 dioptres of myopia, I had removed the lens from this eye. Subsequent to that operation the vision was —3. sph. ⊃—4.50c axis 70°—20/40. The upper portion of the iris presented a rather large anterior synechia.

Some five years after the lens removal the posterior staphyloma extended and atrophic changes occurred in the macular region permitting only eccentric vision.

In May, 1914, the left eye developed a secondary glaucoma with a tonometer registry of 42 mm. Hg. Miotics had but little sustained effect, but at one time the tension fell to 15 mm. Hg.

Trephined March 9, 1915, on the nasal side of the anterior synechia, with iridectomy, followed by hemorrhage into the vitreous. The hemorrhage has cleared and the eyeball remained soft.

April 10th, the tonometer registers 16 mm. Hg.

At the time of removing the lens from the left eye, the right eye was similarly treated and this eye has escaped subsequent fundus changes, having a present vision of 20/40 with correcting lenses of —4.c axis 75°. Prior to lens extraction from this right eye the refraction was —25. sph. vision—20/70 with stenopaic hole.

Case 9. Mrs. C. J. W., 54 years. Acute secondary glaucoma in left eye. In 1909 had a neglected kerato-iritis with posterior synechia, followed by a sclerotizing keratitis, probably tubercular, till the cornea became so opaque as to obscure the pupil.

In February, 1915, had acute glaucoma with a tension of 68 mm. Hg. This eye trephined March 13, 1915, with iridectomy.

March 26th, the tonometer registered 22 mm. Hg., and the patient noted some return of vision.

April 8, 1915, the tonometer registered 30 mm. Hg. The trephine area fails to present any typical filtration bleb.

In Case 1, where there was a subsiding syphilitic plastic uveitis, a favorable result was probably not to be expected. However, the effect of two anterior sclerotomies and an iridectomy had been nil and at the time an enucleation was seriously considered. When after four months all plastic inflammation had subsided, a beautiful result followed a second trephining, not only permitting permanent retention of the eyeball but supplying a vision capable of counting fingers at six feet.

In Case 7, of acute recurring glaucoma where tension subsided

only when a Hancock had followed an Elliot operation, and where there is no obvious sign of a filtration bleb, it is probable that the iris made a plastic prolapse obliterating the hole. While tension and inflammatory signs have subsided the ultimate prognosis is not favorable.

The only cases in this series which could lend themselves to comparative field of vision tests are Numbers 3, 4 and 6, and, unfortunately, nuclear cataracts complicate each of them.

However, Case No. 4 can now read whereas he could not before.

With Cases 1, 7 and 9, one secondary and two acute, it was a choice of operation for the relief of pain permitting retention of the globe instead of enucleation, and only Case 7 is totally blind.

Of these twelve trephine operations upon nine patients, six were for simple chronic glaucoma, the average primary tension being 53 mm. Hg., and the post-operative tension 13 mm. Hg.

In four cases of secondary glaucoma the average tension was 52 mm. Hg., and the post-operative tension 16 mm. Hg.

In the two cases of acute glaucoma an average primary tension of 60 mm. Hg. became 26 mm. Hg.

Therefore, while little value could attach to conclusions from so small a number of cases, it seems that the results obtained are in line with those of other operators.

Note.—At the time of proof reading, May 20, 1915, there has been no return of increased tension in any of these twelve cases.

274 West Eighty-sixth Street.

ON THE MANAGEMENT OF THE LENS WHEN ACCIDENTALLY DISLOCATED INTO THE DEPTHS OF THE VITREOUS DURING THE EXTRACTION OF A CATARACT

Charles H. Helfrich, M. D.,
New York.

ONE of the most serious accidents which can occur in the course of an operation for cataract is the dislocation of the lens into the depths of the vitreous. It may occur either spontaneously in an eye with fluid vitreous and weakened zonule or through some unskillful procedure of the operator or misbehavior of the patient.

Partial dislocations also occur, the lens slipping up behind the iris instead of presenting at the wound, during the attempt at expression. Such partial dislocations are almost universally handled by restoring the lens to its proper position with a spatula and the effort at expression continued.

The same unanimity of opinion as to the correct management of a lens completely dislocated into the vitreous unfortunately does not exist. Two of the most recent works on ophthalmic surgery advise the prompt discontinuance of the operation, leaving the lens in the eye as in the operation of depression. Torok and Grout in their "Surgery of the Eye" state, "If the lens disappears into the vitreous and cannot be seen it is better to stop the operation and bandage the eye. In some cases the lens returns to its normal position in a few days, when another attempt at extraction can be made, which, however, is usually attended with considerable loss of vitreous."

Meller in his work, "Ophthalmic Surgery," states, "In such case any attempt to recover it is useless and usually results only in further injury to the eye. The operation has to be stopped and the eye bandaged. Iridocyclitis often follows this accident."

The very large circulation these two books deservedly enjoy has led me to bring up this matter for discussion in order to counteract the effect of such advice. Despite the acknowledged skill of these operators I believe they are in error and their recommendations directly

opposed to the best interests of the patient; furthermore, that it is at variance with the practice of the majority of American ophthalmic surgeons, who remove the lens at once with the wire loop or similar instrument.

In this connection I desire to quote two other recent authors. Beard, in his "Ophthalmic Surgery," states: "If the cataract must be fished for—the depths of the vitreous dragged, as it were—then a delicate wire loop would be the safer instrument to employ."

Wood, in a "System of Ophthalmic Operations," states: "When they sink deep into the vitreous the condition is a more serious one and the wire loop should be used at once in the hope of reaching them before it is too late."

Just contrary to Meller's statement—the attempt to recover such a lens is not useless and does not result in any further injury to the eye except a slight loss of vitreous. Its removal with the wire loop is certain and the procedure quite within the capabilities of an operator of average ability. All that is necessary is to keep one's nerve and to exercise ordinary care not to injure the retina. The operation is much more simple than would appear on the surface. To desert the lens under such circumstances is a mistake, as "depression" does not offer the patient as good results as extraction.

Meller mentions that iridocyclitis often follows; well, the extraction can result in nothing worse.

The hope held out that the lens if let alone may resume its normal position in a day or two is a doubtful promise. This will occur, it is true, in a small percentage of cases, but a second operation for its removal must be a source of embarrassment to the operator and a tacit acknowledgment that his first operation was a failure. Such a second operation on an eye already inflamed and tender would not only be a trying ordeal, but would be liable to a recurrence of the former accident.

The removal of the lens with the wire loop is somewhat painful, but it can be accomplished in a tractable patient without resorting to a general anaesthetic. If the patient has proven intractable ether should be administered. The beginner had best follow the latter course, as it insures steadiness of the patient and tends to increase his confidence in himself. My own experience in this condition is limited to six cases, with one failure due to iridocyclitis. The five

successful cases recovered with vision as follows: 20/70 in three cases, 20/50 in one, and 20/30 in one.

It may be of some interest to state that the other eye of the unsuccessful case was operated upon a year later. The operation was perfectly smooth, but was also lost through iridocyclitis.

A most interesting case occurred at the New York Ophthalmic Hospital about twenty-five years ago while I was resident surgeon. An intractable patient with uncontrollable orbicularis muscles closed down on the speculum at the completion of the incision, squeezing out nearly all the vitreous, but leaving the lens within. The eyeball was simply a mass of wrinkles. After removing the speculum and closing the lids, the patient was placed under the influence of ether. A wait of thirty minutes was taken to allow the aqueous to reform. When the lids were opened the eyeball had regained its spherical shape and the lens was quickly removed with the loop. The resultant vision was 20/70.

THE VALUE OF THE OPHTHALMOMETER

EDWIN S. MUNSON, M. D.,
New York.

OPINION as to the value of the ophthalmometer seems to be divided, but in my judgment it is a useful instrument, so much so that I have used it daily for fifteen years in all cases of refraction. It must be used, though, with a knowledge of its limitations. Like the microscope, the ophthalmoscope and many other instruments, a certain amount of practice is necessary to become familiar with its workings in order to get the best results.

Personally I am more familiar with the Javel-Schiotz model, but believe what I say applies to any make. The ophthalmometer is only an *aid* in determining refraction, as the final test and prescription must be based on the findings of the trial case. The greatest use will be in the shortening of the time necessary to make a test and in aiding to fit difficult cases. If used as the first step in testing a case, the absence of astigmia, as shown by the reading, is a valuable help, while a high degree will save a blind searching or the overlooking of the astigmia entirely. To use the ophthalmometer after the test has been made with the trial case, to check up or confirm the result, seems to me to be poor practice, as the instrument is not sufficiently accurate and the time-saving feature is thus entirely lost.

The ability to find the axis at once, or to see that the axes do not agree in the two eyes, is quickly noted. The higher the degree of astigmia the more accurately does the machine show the axis. Very low degrees are best determined by the trial case. The ability to find the presence or absence of astigmia in small children and illiterates cannot be denied, and in no class of cases is it of greater help than in aphakia.

In amblyopia the diagnosis is made with more certainty when the instrument shows no astigmia and a glass is fitted with more confidence when it reveals a high degree. Some diagnoses of amblyopia are proven to be false when the vision improves under a strong cylinder glass found by an ophthalmometer reading. This instrument will also detect slight opacities and irregularities of the cornea. Some-

times we can place a cylinder glass so as to help in high degrees of irregularities and at other times the warping will be so great and the surface so uneven that we can see the futility of trying to get any improvement. In conical cornea the reflection shows little flame-shaped images instead of the regular mires.

I know of no special method of using the instrument other than that laid down in the circulars of instruction by the instrument makers or as given in the text-books, and it is not my intention to give these details but take it for granted that the reader is familiar with the fundamental workings of the machine. The following, which is based on my observations of a great many cases, is what I wish to bring out with special emphasis.

In the absence of hyperopia or myopia my finding has been that the opthalmometer over-corrects nearly double; therefore, in making the correction the cylinder glass is about half the ophthalmometer finding. If one step is overlapped I find they take about a .50.

In high degrees of hyperopia the astigmia is sometimes slightly less than half.

In high degrees of myopia it is more than half, sometimes as high as the total reading on the ophthalmometer.

Some authorities say that the reading is too great by a .50 with the rule and this much should be added when it is against the rule. I cannot agree with this, as much more must be deducted in some cases even when it is against the rule. There are a few cases in which the amount and axis do not agree with the trial case. This is due to lenticular astigmia, either neutralizing or over-balancing the corneal. In such cases the ophthalmometer reading will have to be ignored.

The beginner with this instrument, taught to read that each step on the mire is one dioptre of astigmia, and finding a wide discrepancy at the trial case, may lose confidence in the instrument and discard it. If, however, it is used with a better understanding it will be a great aid in many hard cases.

8 West Forty-ninth Street.

A CASE OF RETINAL HEMORRHAGE WITH HIGH BLOOD PRESSURE, APPARENTLY FROM THE EXCESSIVE USE OF TEA

Charles Deady, M. D.,
New York.

MRS. L. W., aet. 35, presented at the writer's clinic in the New York Ophthalmic Hospital for treatment December 6, 1914. Patient complains of a cloud before the left eye, which she says came suddenly. Vision O. D. 20/20, O. S. 20/30 on clearing eye by motion. The ophthalmoscope shows opacities in the vitreous and a moderate-sized retinal hemorrhage below and near the optic nerve entrance.

Patient is a well nourished woman with bright eyes, clear skin and red cheeks. Her family history shows that her father is still in good health at the age of 60. Her mother died at the age of 33; cause not known. A sister is living and well at 37; a brother died in infancy. With one exception the patient is very moderate in her habits. Her average in meals is: Breakfast, cereal and milk; lunch, vegetables, with a moderate quantity of meat, with bread or rice pudding for dessert; supper, light food and a moderate quantity of it. The exception noted above is that she uses tea to an immoderate extent. For twenty-five years she has taken at least four or five cups of strong tea daily, and during the last two or three years she has consumed from twelve to fifteen cups in each twenty-four hours, and always from a pot standing on the stove and steeping all day. The beverage has usually been taken without milk or sugar. Her blood pressure was taken and found to be 170. Examination of the urine gave a specific gravity of 1019; color red; reaction alkaline; total solids 43.83; albumen negative; sugar negative; slight deposit of amorphous urates; no casts; much squamous epithelium.

Patient was given hamamelis 1x and was directed to take only one cup of weak tea daily.

December 27, 1914. Patient much better; left vision 20/20. Treatment continued.

March 31, 1915. Left vision 20/20; blood pressure 130. Patient

feels and looks well. Hemorrhage has disappeared from retina; vitreous much clearer, only one or two small opacities to be found.

In the experience of the writer this case is unique. In a practice covering thirty-nine years many cases have been treated in which the use of tea may have been a factor, but not one has ever shown retinal hemorrhage in a patient as young as 35 years, apparently in good health, whose habits of life were entirely moderate with the single exception noted; with blood pressure so high and with no ascertainable cause except the excessive use of tea.

Few of those writers who have considered the effects of toxins upon the eye have even mentioned tea in this connection. Berry (*Transactions Oph. Soc., United Kingdom,* 1887, vii, p. 91), speaking of toxic amblyopia, mentions the fact that he suspects tea, and Wolf (*Brit. Med. Jour.*, 1879, ii, p. 328), describes fluidity of the vitreous with numerous opacities from the excessive use of tea. There may be others on record, but they are not within the writer's reach at the present time. The specially interesting factor in this case is the rapid recovery, with the large reduction of the blood pressure in a few weeks by simply stopping the supposed cause and the prescription of a simple remedy for the absorption of the hemorrhage.

AN IMPROVED TECHNIQUE IN FORMING A SUPPORT FOR AN ARTIFICIAL EYE

F. G. Ritchie, M. D.,
New York.

THE operation herewith presented includes a method of suturing the extrinsic bulbar muscles and the implantation in Tenon's capsule of a suitably fashioned piece of rubber sponge, a material hitherto unused for that purpose so far as I have been able to ascertain.

The technique of suturing the conjunctiva together with the muscles is a modification of that advocated by De Wecker in 1879, and modified by Allport and Todd in 1901 and 1902, respectively, although I was not conversant with these facts at the time of my devising and exemplifying the operation in the fall of 1914.

My own operation favors that of De Wecker in that the sutures are placed without disturbing the relations of the muscles to the surrounding parts, as after a circumcorneal incision at the limbus the conjunctiva and capsule of Tenon are separated only as far as the attachment of each muscle, in turn. In this respect it differs from the Allport and Todd operations, in both of which the conjunctiva and capsule is thoroughly separated from the globe by the aid of the forceps and scissors. It follows Allport's in this particular, in that I use a pair of advancement forceps to clamp down upon the tendon and superimposed tissues before severing the attachment of the former from the globe, and introducing the suture. *The suture is a continuous one* and is introduced in a manner slightly different from that advocated by the gentlemen before mentioned, as will be noticed in the description of the operation which is to follow.

Instruments and Accessories. The following instruments and accessories will be needed:

Eye speculum
Fine mouse-tooth forceps
Stevens' tenotomy scissors
Stevens' tenotomy hook
Strabismus hook

Advancement forceps

Needle forceps

Double-pronged seizing forceps

Enucleation scissors (author's model preferred)

Curved strabismus scissors (author's model preferred)

Full-curved, small eye needles (self-threading eye), one of which is armed with No. 3 black (braided) silk, ten inches in length

Gauze squares for sponging

Irrigator containing normal saline

Sterilized rubber sponge

The Operation. The patient having been anesthetized and the field of operation properly prepared, the speculum is introduced, the conjunctiva seized deeply with a pair of fine mouse-tooth forceps close to the limbus, and the conjunctiva and capsule incised with a pair of Stevens' scissors close to the limbus throughout its extent.

The point of election at which to make the initial incision will depend upon the operator. Inasmuch as it is my custom when operating to stand back of the patient's head, I grasp the conjunctiva meridianally at the proper extremity of the vertical meridian of the cornea, and then continue the incision circumcorneally in a direction "against the sun." This opening of the capsule may be facilitated, in eyes which have not suffered from the effects of general inflammatory changes causing adhesions between the sclera and capsule, by using the small Stevens' tenotomy hook with the left hand, to act as a pilot for the point of the scissors and to raise the tissues from the globe.

The forceps being held in the left hand, the severed tissues are then seized opposite the lower edge of the cornea and separated from the globe by the aid of the scissors as far as the insertion of the inferior rectus. The tendon of this muscle is caught up on the strabismus hook and the smooth blade of the advancement forceps introduced beneath it in a direction *from the point to the heel of the hook.* The overlying conjunctiva and capsule are pushed back from the cornea to a point on the globe just anterior to the insertion of the muscle, when the forceps are closed and all of the tissues firmly included in the grasp of the forceps. The tendon is then severed *close to its insertion into the sclera.*

The scissors are now exchanged for the needle forceps armed with the needle and suture, the convexity of the former being downward

and its point to the left.

The point of the needle is caused to pierce the conjunctiva and tissues between it and the globe, and then to emerge again, making a stitch which lies midway between the external and inferior recti muscles and parallel with and about two and a half millimeters from the cut edge of the tissues.

The needle is again introduced, in a like manner, so as to cause a stitch to be taken through the same structures and including also the center of the tendon of the inferior rectus. A stitch is then taken between the inferior and internal recti muscles, after which the advancement forceps are released. This procedure is repeated with each muscle in turn until the last muscle (the external rectus) has been included, when, the suture having been drawn through so that the ends are practically of the same length, the needle is removed.

If there are numerous adhesions of the capsule to the globe, dependent upon a previous inflammation, they can be severed at this time, the globe being grasped and steadied with the double-pronged seizing forceps, care being exercised to keep the blunt points of the curved strabismus scissors in contact with the globe. Ordinarily this procedure is not necessary, the optic nerve being easily reached and severed in the usual manner.

The enucleation scissors having been introduced and the optic nerve severed, the detached globe is lifted out on the closed scissors, while, at the same time, the globe is seized with the fingers of the disengaged hand and the oblique muscles and any restraining bands are severed with the scissors.

The patient is now given in charge of the assistant who attends to the irrigation of the cavity and to the checking of the hemorrhage, while the operator, after cleansing his hands, proceeds to fashion a sphere from the piece of sterile rubber sponge by the aid of the clean curved strabismus scissors. This sphere should be a trifle smaller than the enucleated globe. After fashioning, it is thoroughly cleansed by repeatedly squeezing in a normal salt solution, and having been squeezed dry and the hemorrhage having been controlled it is introduced into the cavity and the wound closed by making the first two turns of a surgeon's knot followed by moderately firm traction upon the ends of the suture, care being exercised during this procedure that the cut edges of the wound do not become inverted. The suture

is then secured by the final turn of the knot.

The final cleansing of the field of operation is now made, the necessary dressings applied and the patient sent to bed with instructions that an ice-bag be applied and arnica 3x administered internally.

There may be considerable swelling of the lids and chemosis following the operation, and in one case there was a profuse discharge of pus which upon examination proved to be laudable, there being no pathogenic microörganisms present in the discharge. The swelling and discharge gradually subsides and the suture is removed on the seventh day.

The results of this operation are very satisfactory, there being excellent movement of the stump, while the rubber sponge is well tolerated by the tissues. Slight shrinkage of the stump was not observed as has been the case in which fat has been used. Another advantage is that the patient is not inconvenienced by the wound caused by the removal of the fat and (a point appreciated particularly by the female) is not subjected to the annoyance of the thought of exposure or to the resultant scar.

247 West Seventy-second Street.

A CASE OF METASTATIC CHOROIDITIS

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New York.

THE patient was confined in a maternity hospital and two weeks afterward was transferred to a general hospital, where I first saw her. When first admitted she appeared to be in good condition and was not confined to bed. Suddenly, however, she had a chill followed by fever septic in its character, and on examination by the surgeon it was discovered that she had a pelvic abscess. At this time the eye became involved. The lids were somewhat swollen; eyeball injected and inflamed. This developed into an irido-choroiditis; there was exudate into the pupillary space and the iris would not dilate under a mydriatic. While being treated for her septic condition by the surgeon she was given stock (polyvalent) vaccine, under which together with the surgical treatment her general condition gradually improved, but the eye condition remained stationary and appeared as though it might pass over into a panophthalmitis. Examination of her blood showed a streptococcic infection. I gave her at the time, hypodermically, ten minims of a one to five hundred solution of cyanide of mercury containing some cocain to deaden the pain from the injection. Following the injection there was not much inflammatory reaction but it was painful; this gradually subsided. From the time of the injection there was a gradual subsidence of the inflammatory condition of the eye. The exudate in the pupillary space disappeared and the pupil was partially dilated by atropin. The vitreous was too hazy to allow any details of the fundus to be seen. The inflammation of the eye gradually subsided but the patient only had perception of objects moving before the eye.

Before the patient left the hospital there were some contractions of the ball around the muscles, showing that it would probably become partially atrophic. The subconjunctival injection of the cyanide of mercury was given April 13th, when the blood showed streptococci. On April 24th the examination of the blood showed it was free of the streptococci.

This case was probably not a true metastic chroiditis but more

probably a localized infection of the choroid due to the bacteriemia.

Metastatic choroiditis is generally considered due to a septic embolus carried through the blood channels to the inner tissues of the eye, as the retina and choroid, causing an inflammatory reaction followed by a purulent exudation at the seat of infection in the eye.

According to Alt the factors for its production are pyemia and embolus.

Milder cases may be due to an auto-intoxication caused by toxins. The metastatic condition shows itself as a sequel of many systemic diseases; also in surgical and puerperal pyemia and in other septic conditions of the system. The organisms responsible for the development of metastatic disease of the choroid are streptococcus, staphylococcus, pneumococcus, meningococcus, pneumo-bacillus, influenza bacillus, typhoid bacillus and mixed infection.

It is believed that while the embolus is an important factor in the production of this metastatis it is not essential in all cases. It is regarded as proved, however, that bacteria find foci in altered or injured tissue favorable to their multiplication and are due to a general bacteriemia. In many instances the bacteria are carried through the blood stream to the eye capillaries and produce disastrous inflammation. According to authorities it will be shown by increased experience resulting from the study of choroiditis from puerperal pyemia that the ocular disturbance is due rather to the general bacteriemia than to a specific embolus. The so-called post-partum ophthalmic inflammation usually occurs about the sixth day after delivery; rarely after the end of the second week. It is either unilateral or bilateral, the latter being fatal in from eighty to ninety per cent. of cases. The unilateral cases give much better results as regards life but the eye involved is usually lost.

The following is a case of localized exudative choroiditis with irido-cyclitis serosa, probably due to an auto-intoxication:

A young man complained of a blurring of vision of his right eye, with some pain on moving the eye and on pressure backward. Examination showed his vision in that eye to be 15/20. The ophthalmoscope showed a slight indistinctness of the edge of the optic nerve. Testing for contral scotoma, there was some difficulty in recognizing green; red was normal. No other changes in fundus at this time. Diagnosed a slight inflammatory retrobulbar neuritis and gave belladonna inter-

nally for a couple of days, which relieved the pain. After this the vitreous commenced to grow hazy and I discovered a whitish exudation in the choroid above the optic nerve, between it and the periphery of the fundus. There were also some punctuated scattered spots on Descemet's membrane; pupil slightly dilated and tendency to increase of tension. I put him on gelsemium for a couple of days without any result.

Now as this patient had always been a good eater, liked meats, sweets, etc., and also as he had had an attack of tonsillitis a month before, I figured it out that there was some relation in the causes of the two troubles and that it was probably an auto-intoxication due to excessive feeding and faulty elimination. As I had had very good results in treating cases of rheumatic iritis with aspirin (which were probably due to the same cause) I concluded to give him aspirin, gr. v, four times a day, with the result that the disease was checked in its progress, but not before the vitreous had become very hazy and the tension increased slightly. The lens also was pushed forward, the latter undoubtedly due to the serous exudation from the ciliary body back of the lens. To substantiate this I examined the vision with glasses, which showed a myopia of one dioptre; while in his normal condition under a mydriatic he had a hyperopia of two dioptres. There were some adhesions of the iris to the anterior capsule of the lens. The pupil was partially dilated, the adhesions were not plastic but were probably a serous exudate, for as the disease went on to recovery they all disappeared and the pupil became normal without any adhesions or deposits on the lens.

Aspirin undoubtedly checked the disease but it affected the patient's knees in walking. It was not continued over a week. To my mind the aspirin acted as an intestinal antiseptic. He cleaned his bowels out at the same time with magnesium sulphate and kept on a low diet.

Although there was no specific history I gave K. I. for a week with no benefit. The remedy that followed was Kali mur 3x, which completed the cure. It was a couple of months before the eye was normal.

There remained as a result of the trouble an atrophic spot in the choroid where the exudation was, but as it is away from the center of the fundus it does not affect vision, which is now 15/10; also there are a few small floating opacities seen at times.

Some time after this I had a case of exudation in the choroid to the inner side of the optic nerve with some haziness of the vitreous. There was no iridocyclitis. I considered the cause of this case the same as the other and treated him the same way with the result that the eye and vision became normal, except that there was an atrophic spot where the exudation had been. A year later his other eye became affected in the same manner. He had tonsillitis at the time. Besides treating his second eye in the same way as the first I put him on inunctions of mercury, but apparently without any benefit. As his father was said to be tubercular I thought it possible that the case might have this origin, the exudate in the last eye affected appearing to resemble those cases as shown in the text-books; but a von Pirquet test was negative. This eye was treated on the same lines as the other and he has had no further trouble, or at least the patient has not returned.

I believe that a good many of these cases which we formerly suspected to be due to an hereditary syphilis are really due to an auto-intoxication, and I think it is advisable to treat them along these lines unless there is strong evidence of some other cause.

I must say that all these cases, especially where there is a marked irido-cyclitis serosa, do not respond so satisfactorily to the same treatment or to any treatment. Some cases are very slow and stubborn; nevertheless I believe there is a faulty metabolism at the bottom.

REFRACTION OF MENTALLY DEFECTIVE CHILDREN

SHOWING THE IMPORTANCE OF PROPER REFRACTION IN ALL BACKWARD CHILDREN

M. B. Beals, M. D.,
New York.

IN the public schools of New York City the children who are decidedly backward in school work are gathered together in sufficient numbers to form a class, which is termed the ungraded class. These classes are composed of children of all school ages and all degrees of mental deficiency ranging from low forms of idiots to children who are simply backward because of physical defects, as high degrees of refractive errors, which retard the mental growth of these children not only by their imperfect vision but more so by the effect of the continued eyestrain on their nervous systems.

This fact I think I shall be able to illustrate in some of the following cases.

It will readily be understood that correct refraction of this class of cases is decidedly difficult, as with but few exceptions we must depend entirely upon the "shadow test" in determining the correction required, as nearly all do not know the alphabet or have not sufficient intelligence to help us make the usual corroborative test with trial lenses.

In the line of research work for the Health Department I refracted two hundred and forty-six mentally defective children in one group. In three of these cases I was unable to get a sufficiently good shadow to determine the refractive error. Out of two hundred and forty-two cases I found one hundred and eighty-two with decided refractive error, and only fifteen of these had glasses. I prescribed glasses for one hundred and seventy-seven children; of these one hundred and thirty-two were finally provided with glasses I had prescribed, followed by very interesting and pleasing results.

Of these one hundred and thirty-two cases, eighty-seven showed varying degrees of improvement in mentality, from slight improvement in their work, which depended on vision, up to astonishing progress, to such a degree that the children were able to go into the

class and grade of their age, eliminating them entirely from the stigma of the "mentally defective."

When we consider that a large number of these children are low forms of idiots, so pronounced by authorities on mental diseases, as Dr. Schlapp, of the Post Graduate Hospital and other specialists, this must be considered an exceedingly high percentage of improved cases.

For example: Thirty-eight of these children were sent to Dr. Schlapp's clinic and twenty-eight were diagnosed as belonging to some of the several types of idiots. Here are a few interesting ones of the group:

Italian boy, age 8 years.

Glass O. U.+1.^{s}

Improved at once. Much less restless. More concentrated. In three months was promoted to regular grade.

Italian boy, age 11 years.

Glass R—4. ^{s}—3^{c} ax. 40.

L—.50^{s}—2.50^{c} ax. 160.

Great improvement in school work. More interest and life. Before glasses he made all numbers backwards; after glasses he writes correctly.

Boy, 9 years of age.

Glass R+2.^{s}+.50^{c} ax. 90.

L+2.^{s}+.25^{c} ax. 90.

Quieter, more interest, better writing, improved in all visual work. Hope to promote soon.

Boy, 9 years of age.

Glass R+2.^{s}+1^{c} ax. 105.

L+2.^{s}+.50^{c} ax. 90.

Improved in writing and spelling, and all hand work.

Girl, age 10 years.

Glass R+3.50^{s}+.50^{c} ax. 90.

L+2.^{s}+.50^{c} ax. 90.

This child refused to learn to write; after wearing glasses she writes very well and improved in reading.

Boy, 13 years of age.
Glass R+2.^{s}+1.50^{c} ax. 95.
L+4.^{s}+.25^{c} ax. 90.
Made steady improvement until put in regular grade.

Boy, 10 years of age.
Glass R+3.^{s}+2.^{c} ax. 45.
L+2.^{s}+1.50^{c} ax. 155.
In four months after glasses had progressed from 1A to 3A Grade and is doing fine work in 3A.

Girl, age 9 years.
Glasses R+3.^{s}+1.50^{c} ax. 95.
L+3.^{s}+1.50^{c} ax. 90.
This child had a violent temper; could not or would not do any school work; could not read or write; had no control of her temper and looked white and depressed; had constant nocturnal enuresis. After four months with her glasses, most wonderful change in child. She developed a pleasant, sunny disposition. General physical appearance much better; nocturnal enuresis stopped; had good control of her temper; made rapid progress in reading, writing and sewing. About this time her glasses were broken and were not replaced for three weeks, during which time the child returned to her former state, including the nocturnal enuresis, bad temper and refusal to do any school work and lost color and vivacity. The glasses were then renewed, followed by all the improvements noted before.

Boy, 10 years of age.
Glass O. U. 4.^{s}.
Much improved in all branches and especially in conduct. Used to be violent at times. His teacher says she never saw his eyes open before. An existing strabismus very much improved.

Boy, 8 years of age.
Glass R—.50^{s}+3.^{c} ax. 90.
L—.25^{s}+3.50^{c} ax. 90.
This case, pronounced by Dr. Schlapp as mentally deficient, was characterized by a lack of muscular co-ordination. He could walk with difficulty and by holding to the furniture, and was very uncertain in the use of his hands. With his glasses he made great improvement

in all visual work at once, but the most interesting feature of this case was the improvement in the co-ordination of muscles. The improvement was so great that he could play ball well and could bounce a small rubber ball from hand to floor and walk across the room without missing a bounce while walking. He had never learned to read but with his glasses he soon advanced to the second year reader, writing, etc.

Boy, 10 years of age.

Glass R+2.50^{s}+1.50^{c} ax. 90.

L+3.50^{s}+ .50^{c} ax. 90.

School nurse reports the boy seems to have had a general awakening of dormant faculties since wearing glasses. Great improvement in reading and writing.

Boy, 16 years of age.

He was a bad boy and belonged to a bad crowd and had been arrested and paroled by the court. After being properly fitted with glasses he did not miss a single day at school and seemed to take great pleasure in his work.

These few cases give an idea of the nature of the benefit derived from this class of refraction. Many cases which were types of idiots showed decided benefits from the glasses prescribed. Their disposition improved; they were quieter, more easily controlled and did better mental and manual work than they had previously done.

Since refracting this group of ungraded children I have refracted about one hundred cases both in and out of school, not one of which has failed to show benefit from the glasses; all of them had high degrees of refractive errors, which might be expected, as they were not a group but were selected cases sent by their teachers or physicians and were showing symptoms of eyestrain.

In the public schools of New York there are more than fifteen thousand ungraded children and many more thousands of backward and incorrigible children, and it is a safe estimate that not five per cent. have glasses; also that more than seventy-five per cent. need glasses and would derive great benefit from them. The city would save much by this improvement in these otherwise unteachable children, yet there is no systematic, competent refraction of these cases and most of these children do not get even a vision test in the school, as they do not know the alphabet, and the vision is put at "no test"

when the physical examinations are made of each child about once in three years.

498 West End Avenue.

Nasal treatment of dysmenorrhea. The "genital spots"—the tuberculum septi and the anterior portion of the inferior turbinate on each side—at menstruation (or other sexual excitement) are apt to swell, bleed easily, become slightly cyanotic and sensitive to the touch of a probe. Particularly if there is marked nasal stenosis, from hypertrophy of the middle turbinal, deflected septum of septal enchondrosis, cocainization has relieved menstrual pain, for the time. Emil Mayer (*J. A. M. A.*) has made permanent cure of dysmenorrhea by cauterizing with trichloracetic acid (after mild cocain) four times between the periods—of course waiting for five days for the slough to disappear. He has had to do this between periods as much as four times, but obtained relief in about seventy-five per cent. of his cases.—*Critic and Guide.*

Of course this is on the supposition that no local cause of dysmenorrhea can be made out, but the homoeopathic remedy will suffice and is preferable to destruction of tissue. The reviewer recommends Minton's "Uterine Therapeutics" (out of print) as by far the best homoeopathic book of its kind ever written.

ATYPICAL MASTOIDITIS

L. E. Hetrick, M. D.,
New York.

MASTOIDITIS is almost invariably a secondary disease. It usually follows a suppurative otitis media; the otitis media may be a complication of any of the acute infectious diseases. Infection of the middle ear is accomplished through the Eustachian tube. Involvement of the mastoid cells is an almost invariable complication of all acute suppurative otitis medias; it becomes paramount when, in the course of an acute otitis media, drainage is incomplete or insufficient and more or less retention occurs. It will therefore be seen that early and efficient paracentesis in otitis medias is absolutely essential, and, owing to the tendency for the incision in the tympanic membrane to close prematurely, it is oftentimes necessary to re-open the incision and at times, in order to keep it open, a small wick must be inserted between the lips of the wound. Where, however, the progress of the infection goes on to an involvement of the mastoid proper we have a change in the aspect of the case from an otitis media to an acute mastoiditis. It is not the purpose of this paper to go into the subject of mastoiditis deeply, but merely to refresh your memories on the cardinal symptoms in the diagnosis of mastoiditis and some of the symptoms which in an atypical case may call your attention to mastoid involvement.

Before going further I would recall to your minds the relationship of the Eustachian tube, tympanic cavity, attic and mastoid antrum, and, in doing so, also call your attention to an important anatomical point. You will recall that the Eustachian tube runs from the pharynx upward, outward and backward to the upper part of the anterior wall of the tympanum; that just above and forming really a part of the tympanum we have the attic or epi-tympanum, and just back of this in a straight line from the Eustachian tube we have the mastoid antrum.

It will be seen in the accompanying illustration that the black stick of wood which I have placed in the Eustachian tube corresponds to the long axis of the tube and passes directly into the mastoid antrum. This will explain how infectious matter may be blown directly into

the antrum and produce a mastoiditis without middle ear symptoms.

I was very much interested to read a series of seven atypical cases of mastoiditis, reported by Dr. C. B. Welton, of Peoria, Ill., in the March issue of the *Journal of Ophthalmology and Oto-Laryngology*. Two of the series had no middle ear involvement. These two, with one which I shall report later in this paper, together with one reported by Mackenzie in the *Journal of Laryngology, Rhinology and Otology* (London), make four cases that I am able to report at this time in which there has been no evidence of middle ear involvement.

SECTION THROUGH TEMPORAL BONE

Author's Specimen



E.A.M.—Ext. Aud. Meatus.
O.W. —Oval Window.
R.W. —Round Window.
F.C. —Facial Canal.
P. —Promontory.
S. —Stick in Eustachian Tube Pointing to Antrum.

The above point in the anatomy of the temporal bone to which I have called your attention explains the manner of the mastoid involvement, and so far as I know is the only and most plausible explanation to date.

The cardinal symptoms of mastoiditis as given by most authors are persistent pain in the mastoid, tenderness on pressure, a rise in temperature, an increase in local temperature, swelling over the mastoid, causing the auricle to stand out from the side of the head in the characteristic manner, bulging of the tympanic membrane and the

posterior wall of the external auditory canal, a sudden diminution or cessation of discharge and occasionally facial paralysis. These are characteristic symptoms of an acute mastoiditis. A dehiscence in the facial canal may cause inflammation, swelling, pressure and paralysis of the nerve.

All cases of suppurative otitis media do not terminate in mastoiditis, but may terminate in resolution under proper treatment, with a return to fairly good hearing. All cases of acute mastoiditis do not require operation but may recover under proper treatment. The usual course, however, is abscess formation and softening, absorption and necrotic destruction of the bone as the pneumatic cells become softened and break down; the abscess cavity becomes larger and the pus progresses along the lines of least resistance, either toward the cortex of the mastoid, where a spontaneous perforation of the abscess may take place, or toward the inner walls with perforation into the posterior fossa, or to the superior wall with perforation into the middle fossa, or inward through the oval or round windows into the labyrinth. Should the progress be outward, with a perforation through the cortex of the mastoid process, we have the formation of a subperiosteal postauricular abscess, or the suppurative process may progress through the inferior part of the mastoid into the structures of the neck; in which case we have swelling under the ear and a typical Bezold abscess. With the occurrence of these last two perforations the acute pain may subside, therefore the sudden subsidence of pain in the course of an acute mastoiditis is a suspicious symptom and would lead you to suspect any of these courses.

If the suppurative process involves the labyrinth there are developed characteristic symptoms of an acute suppurative labyrinthitis, which are sudden deafness, vertigo with nausea and vomiting, spontaneous rotatory nystagmus to the sound side, disturbances of equilibrium, negative caloric reaction, diminished or negative reaction to turning, diminished or negative reaction to galvanism. If the suppurative process perforates into the cranial cavity there may be any of the intracranial complications. Intracranial complications are extradural abscess, intradural abscess, lepto meningitis diffusa and meningitis serosa, brain abscess (temporal lobe and cerebellar), thrombosis of the sigmoid sinus and bulb of internal jugular vein, thrombosis of superior and inferior petrosal sinuses and of the cavernous sinus.

erosion of the internal carotid and sigmoid sinus. It is not within the scope of this paper to go into the symptoms of these complications but to mention them.

The above course is that of a progressive, virulent, suppurative mastoiditis and the symptoms enumerated are the characteristic typical symptoms. It is possible, however, to have a suppurative mastoiditis without any of these symptoms, or at least with very few of them, as may perhaps be best illustrated by citing two cases which I have observed.

Case 1. Chas. R., colored, age 24, well-nourished, came into my clinic on November 17th with the following history: Latter part of July had O.M. Sup. Ac. Paracentesis of drum membrane; discharge for two or three days, since which has had none.

Present condition: Temperature 98.6. Patient complains at the present time of a swelling with pain and tenderness under the right ear and some tinnitus. There is no discharge from the ear and has been none since July. The membranum tympani is dull, lustreless and has a thickened look; it is very slightly bulged and somewhat reddened in the upper posterior quardrant. No pain in the ear.

The swelling in the neck progressed slowly, patient at times feeling little or no pain, until November 24th, when he complained of some pain in the ear. He was admitted to the hospital. Temperature on admission, 98; pulse, 76. Urine showed increased phosphates and amorphous urates. He was prepared for mastoid operation and operated on the 25th.

Findings at the time of the operation as follows: Paracentesis of the membranum tympani disclosed the tympanic cavity filled with thick, creamy discharge; pressure on the swelling in the neck caused this discharge to well up and flow out of the external auditory meatus. We were then enabled to make a positive diagnosis of a Bezold mastoiditis and proceeded to perform the usual mastoid operation. The usual incision was made, extending from the upper limits of the auricle attachment in a curved line one-half inch behind the auricle well down beyond the tip and on to the swelling in the neck. The soft tissues including the periosteum were pushed aside and the cortex uncovered. The bone appeared to be perfectly normal and we were very much surprised to find the entire cortex practically normal, consisting of the usual hard, dense bone—but it was very

thick, probably 5 mm. before we reached pneumatic cells. We were still more surprised to find these cells quite normal and in the process of the operation pus was not reached until we were clear into the mastoid antrum; here we found extensive necrosis. This necrosis involved the inner surface of the mastoid, exposing the dura of the posterior fossa and lateral sinus. The lateral sinus was covered with granulations showing that we had to deal with a perisinus abscess. As we proceeded inward we discovered a necrotic dehiscence in the tegmen antri and a small extradural abscess in the middle fossa. There was no bulging of the dura in either fossa, no signs of intracranial abscess and the dura was therefore not incised. All necrotic bone was removed downward, almost into the jugular fossa. The wound was packed with iodoform gauze and the usual after-treatment carried out. There was no involvement of the labyrinth. Smears taken at the time of the operation showed staphylococci. Recovery was uncomplicated and tests made on March 17, 1915, showed hearing in the right ear for conversation, 12 feet; whispered speech, 2 feet; watch, contact.

Case 2. Mrs. J. K., age 41. Patient came into my office, complained of pain in external canal of left ear; had had this pain and sensation of fullness for two or three days. Never had had any previous ear trouble and denied ever having had a discharge from her ears. General health fairly good. Upon inspection I found several small boils in external canal. Tympanic membrane somewhat congested but no bulging could be made out. I gave her the usual local treatment for the boils and in due time they subsided and she was discharged. She returned in three days complaining of swelling and pain in her neck, left side, and upon examination I made out a swelling along the sterno-mastoid muscle and advised having it opened. There was no symptom of mastoiditis present and the temperature was normal. She was admitted to the hospital that afternoon and operated. No pus was found in the neck and on opening the sheath of the muscle some cloudy serum was found. This made me think of the mastoid, which I accordingly opened. It was entirely necrotic and full of foul smelling diseased tissue. After thoroughly removing all diseased bone the healing was uneventful. Hearing but slightly affected.

The above cases illustrate the fact quite conclusively that you can

have an extensive necrosis of the mastoid without any of the cardinal symptoms of mastoiditis, and that you can have mastoiditis without history of any middle ear suppuration. The first case did not manifest any symptom that could be attributed to the mastoid until the Bezold abscess developed in the neck, and the second case no symptoms of either middle ear or mastoid involvement.

We may therefore conclude that while a typical case of mastoiditis presents many, if not all, of the symptoms enumerated in the first part of this paper, we may have an atypical case in which few, if any, of the typical symptoms of mastoiditis are evidenced, and that given a case of suppurative otitis media we should watch for any of the following symptoms, each of which separately or in connection with any of the cardinal symptoms is suggestive of extension of the inflammation from the tympanic cavity:

A suppurative otitis media which under appropriate treatment lasts over four to six weeks is suspicious. A sudden diminution or cessation of discharge in contradistinction to the gradual cessation of discharge in a favorable case. Pain and tenderness over mastoid. Bulging of the drum membrane and superior posterior wall of the external canal. Tenderness, thickening and immobility of the tissues over the mastoid on the affected side, as compared with those of the opposite side. Post-auricular swelling. Swelling below the ear. A sudden change in temperature. Facial paralysis. Symptoms of labyrinth involvement. Persistent headache on the same side. Symptoms of intracranial complications, headache, choked disc, slow cerebration and so forth. A healed drum membrane which continues dull, lustreless, thickened and somewhat bulging.

In closing I will say that all cases of otitis media suppurativa should be sent to the aurist and that the mastoid operation is one which should not be attempted by any one but an experienced ear man.

4 West Ninety-third Street.

EUONYMIN IN THE TREATMENT OF DISEASED CONDITIONS OF THE NOSE AND THROAT

CHARLES E. TEETS, M. D.,
New York.

EUONYMIN is the active principle of Euonymus atropurpureous, commonly known by the Indian name, Wahoo, and by the common name of burning bush.

My attention was first called to this remedy about twenty-five years ago while reading Hale's book on "New Remedies." At that time I was in general practice and first prescribed this remedy for gastric derangement and as a hepatic stimulant. The results were so marked and satisfactory that patients were not long in recognizing the value of this drug and would come to have the prescription renewed, renaming it stomach powders.

Very few symptoms are given in Hale's Symptomatology and those that are recorded relate principally to its action on the liver, kidney and digestive organs. At this time I was giving special attention to diseases of the nose and throat, and I noticed in several patients on examining the throat from time to time that the congestion in the pharynx disappeared and that the post nasal discharge was not only changed in character but was diminished after taking euonymin.

In 1903 in trying to get some further information on the drug, I noticed in Boericke's *Materia Medica* that euonymus had been used in headaches and chronic catarrh. Also in the *Materia Medicas* of one of the drug houses it was recommended as an expectorant. Before going any further I want to make it clear that changes in the throat and naso-pharynx are not always due to local conditions or abnormal conditions of the nose and throat, but may be the result of some derangement of the digestive or other organs. Many diseases are recognized by certain manifestations in the throat. The congestion and inflammation resulting from indigestion may not be confined to the pharynx, but may extend not only to the larynx but to the trachea, producing a very troublesome and obstinate cough, which cannot be relieved by any local remedy without first relieving or curing the digestive trouble. In many cases where the tongue was

only slightly coated, and principally at the base, after giving euonymin the tongue not only cleared but the congestion disappeared from the pharynx and larynx and the post-nasal discharge became less in quantity.

In those cases where the discharge was principally from the nasal cavities I could not see any decided improvement. In one case where there was a profuse nasal discharge accompanied by a discharge from the frontal sinus, the patient, after taking the remedy for about two weeks, thought she was very much benefited by it. I was at the same time cleansing the frontal sinus and nasal cavities with formalin, 1-3000, so the improvement which was clearly noticeable could not be attributed to the drug alone.

In some cases following operations upon the nose, especially where there was a profuse discharge previous to the operation, the remedy has appeared to be helpful.

It is in the naso-pharynx, larynx and trachea, however, where the remedy has given the best results. The clinical symptoms which call for euonymin are excessive post-nasal discharge, pharynx covered with mucus, congestion of the ora, and laryngo-pharynx and treachea, with irritation in the region of the larynx and trachea, which produce spasmodic attacks of coughing. Most of the patients describe the cough as starting in the region of the larynx, but low down, so that the irritation may be at the upper part of the esophagus or near the entrance. The tongue may be only slightly coated at the base, or the whole tongue may be coated white. When taking the remedy myself, while the post nosal discharge has not disappeared as rapidly as I would like or expect, I have noticed that within twenty-four hours the character of the discharge had changed; became less tenacious and could be expectorated easily, not requiring several attempts at hawking to dislodge it. Another symptom which I have noticed is the increasing dryness of the nasal passages while taking the remedy, which leads me to think that those patients suffering from a profuse nasal discharge and claiming to be benefited while taking this drug were right, and that the improvement noticed was partly due to the euonymin and not to the local treatment alone.

I do not claim that euonymin will cure all cases presenting the symptoms which I have just enumerated, first, because of the peculiarity of some patients, and, second, it is possible our attention may

be so centered upon the throat symptoms that we overlook some important symptoms in other parts of the body.

As I know of no reliable proving I think the report of some cases selected from a number which I have treated with euonymin will more clearly demonstrate the clinical symptoms and the action of the drug on diseased conditions of the nose and throat.

Case 1. Mrs. R. came to me with a history of an excessive discharge from the post-nasal space which required frequent attempts at hawking to dislodge. She informed me she had been suffering for several weeks and tried different remedies and had even gargled with pankotine, but received no relief. She believed the discharge affected her stomach. Euonymin was prescribed in three-grain doses and the naso-pharynx douched three times a week with pankotine. After the first week I noticed the discharge had become less, not so tenacious, and in three weeks it had almost entirely disappeared. At this time the patient developed a severe cold and the nasal membrane became swollen, obstructing the nasal passages. It became necessary to give some other remedy in alternation with euonymin. She made a good recovery without the reappearance of the post-nasal discharge which she had when she first came for treatment.

Case 2. Miss E., age about 55 years, came to me suffering from a cough which she had had for three months. She had been treated in Europe and by a physician in one of the suburban towns where she was stopping, and while the cough at times seemed to improve and become less troublesome, nothing the doctor had given her had given permanent relief. In questioning her as to what seemed to produce the cough, and where, in her opinion, it originated, she informed me it started low down over the thyroid cartilage. I examined the lungs first so as to be sure the trouble was not there. As I did not see any evidence of trouble in these organs I examined the throat. The ora-pharynx was congested, the congestion extending down even into the trachea; there was considerable mucus in the laryngo-pharynx and in the larynx where it could be seen clinging to the cords. The post-nasal discharge was not so excessive as I have seen in many cases where there was such an abundance of mucus in the larynx. The tongue at the base had a thick white coating; careful questioning did not reveal any other symptoms of indigestion. In the last fifteen years I have treated this patient a number of times for a

laryngeal cough, giving bryonia, Kali. bich., sticta, and various other remedies, and while succeeding in curing the cough and throat trouble the duration of the attacks was usually from two to four weeks. As I considered the coating on the tongue an indication of some digestive disturbance I decided to give her euonymin, 1x trituration, a three-grain powder four times a day one-half hour before meals and at night before retiring. I was using at the same time the vapor from a mixture of eucalyptol and tangerine oil. In three days the cough had improved and in ten days she was entirely relieved of the cough and the throat symptoms had disappeared, with no return.

Case 3. Miss M. had been under treatment for four months for an obstinate cough and irritation of the throat. The different treatments and remedies had given her only slight relief and the relief which she did receive was of short duration. The treatment had been started while in Europe and when I was first called in consultation she had been treated for two months by her family physician. The family physician was not only a good homoeopath but a good prescriber, a better one than I ever expect to be. I visited the patient at her home, made a very careful examination of the pharynx, larynx and the nasal passages, and came to the conclusion that the trouble originated in some part of the pharynx. She had some lymphoid tissue at the base of the tongue and I thought it possible that the starting point of the inflammation was there. I suggested some local treatment and a remedy, believing that the symptoms would soon disappear. The treatment which I advised was carefully administered by the family physician. Two weeks of this treatment had brought no relief, the cough being so persistent especially at night, depriving her of sleep, that she became dissatisfied and informed her family physician that something must be given to check this cough so that she could get some rest. If I remember correctly heroin had been given at night but with only slight relief. The family physician then decided that it would be better to put her under my care and have her come to my office and receive treatment.

I started the office treatment with applications of nitrate of silver to the base of the tongue, argyrol to the naso-pharynx and inhalations of the vapor of eucalyptol and tangerine oil. She had bryonia first, then Kali. bich. At the end of two weeks I could see that she had not improved and she herself informed me that she was no better

and gave me her opinion of doctors in general, including me, and that she did not believe the doctors knew what really was the matter with her and that she believed the whole trouble came from her stomach. She had on several occasions made this diagnosis of her own case; her tongue was slightly coated but I could see no other indications to confirm her diagnosis. However, I came to the conclusion that if the cough and irritation of the larynx came from the stomach there was one remedy that would cure it, and that was euonymin, so I decided to give it a trial. In four days she reported that she felt an improvement and that the cough was very much less. In ten days she informed me that the cough had almost disappeared and that she had had only one spell of coughing the previous night and felt she was almost cured. In two weeks' time she reported that she practically had no cough and was not at any time during the night disturbed by it. She continued the treatment for a while but there was no return of the cough. Here was a case that without doubt was cured by euonymin. My selection of the drug, I must admit, was due to the hint or diagnosis given me by the patient. I continued with the vapor of eucalyptol and tangerine oil but I do not believe this had anything to do with the disappearance of the symptoms because she was receiving this local treatment without benefit before the administration of euonymin.

Not wishing to weary you with a long list of cases I have selected these three from a number which I have treated with euonymin. While no stomach disturbance could be observed in some of the cases which were relieved and cured by euonymin, I am still of the opinion that it acts best when accompanied by some gastric derangement.

The 1x trituration of the plant, or green powder, gives the best results and should be given in three-grain doses four times a day dry on the tongue. If possible the patient should avoid taking any water directly after.

A PRACTICAL METHOD OF CORRECTING SEPTAL DEFORMITIES

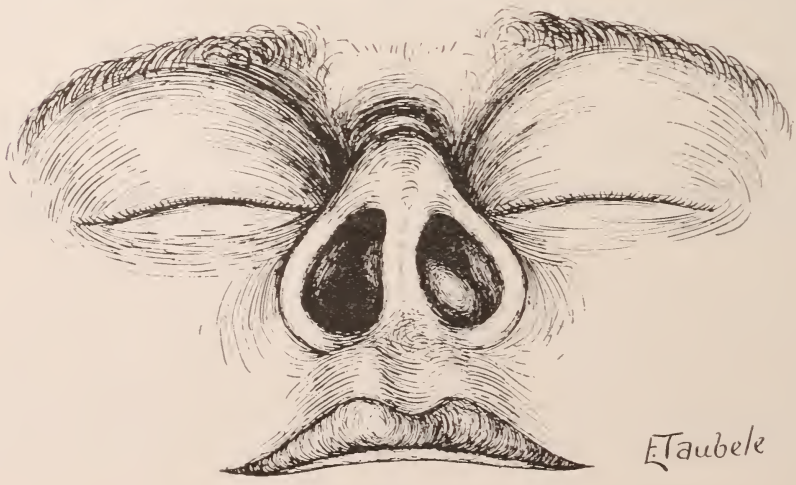
Irving Townsned, M. D.,
New York.

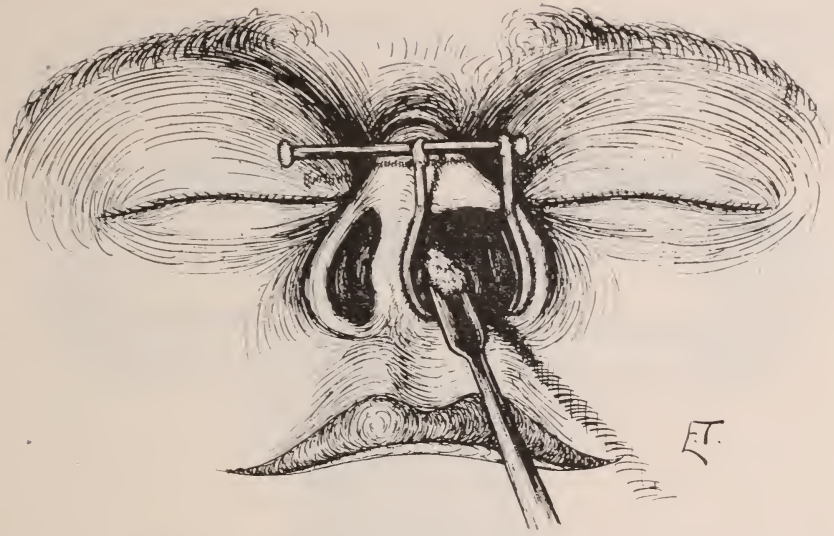
UNDER this title I presented a brief outline of an operation at the last meeting of the O. O. and L. Society which it is now my intention to describe more fully in detail.

The various methods of submucous resection of the septum having to a large extent superseded the means previously employed for correction of septal irregularities and deviations, it would seem to behoove us to adopt the simpler technique hereafter described rather than a more radical one.

A brief consideration of the anatomy of the part may be useful as a basis for the procedure suggested. The nasal septum is composed of cartilage and bone; the anterior third is composed of cartilage, and the posterior two-thirds made up of the vertical plate of the ethmoid above and the vomer below. The cartilage articulates with these two bones posteriorly, and below with the crest of the superior maxillary. It is generally conceded that most septal deformities are of traumatic origin occurring either in the formative period of infancy or early in life.

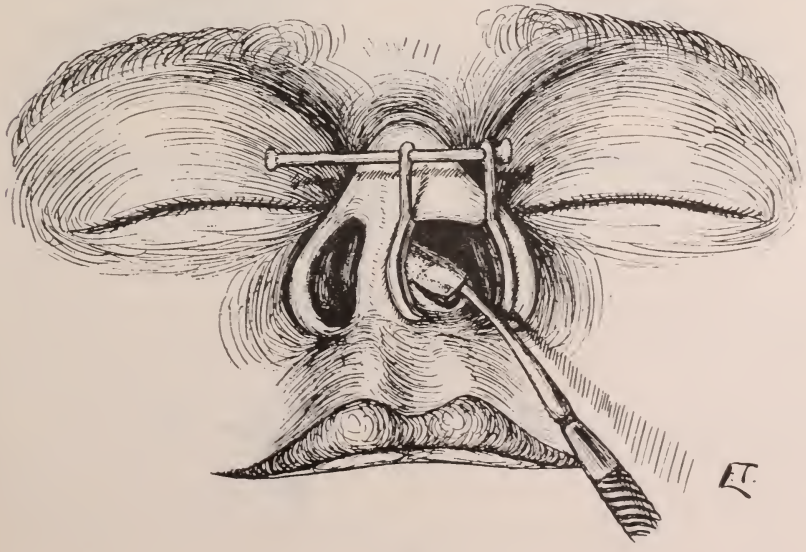
In very many cases of septal deflection a marked ridge of bone is





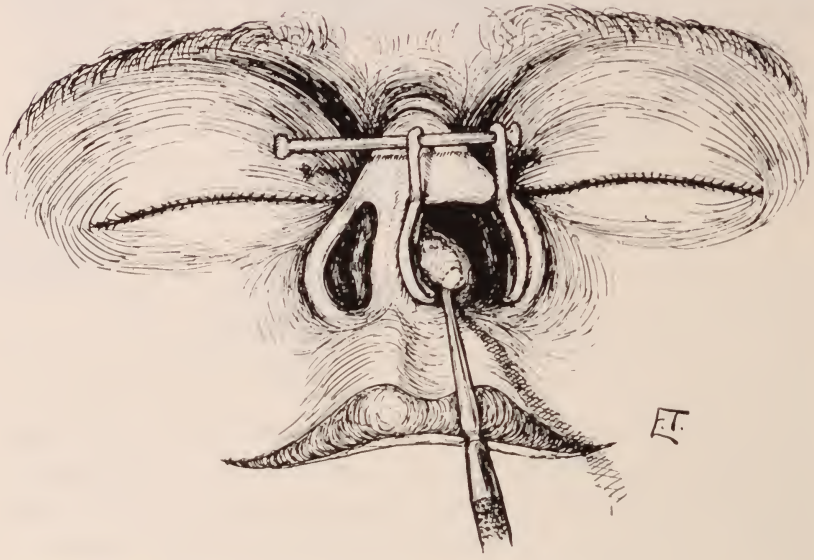
present along the articulation of the cartilage and the crest, more often on the side of the convexity. My idea is that this bony ridge resulting from a hyperplastic inflammation has crowded the more resilient cartilage out of its position. As our efforts are directed toward the restoration of free nasal breathing, drainage, and the preservation of a healthy membrane is it not reasonable to give the preference to a means that will attain all these in the highest degree?

In my later operations I have omitted the initial incision and find it to be unnecessary. The following description with the accompany-



ing drawings will, I trust, make the technique readily understood.

Fig. I. is fairly typical of the class of cases I have in mind showing on the left side a ridge of bone along the base of the cartilage



and a tilting or bowing of the cartilage to the right.

Fig. II. The first step is to insert a broad Hajek or bevel-edged chisel under the ridge, including also the crest of the superior maxilla, and chisel directly backward to the vomer along the floor of the nares.

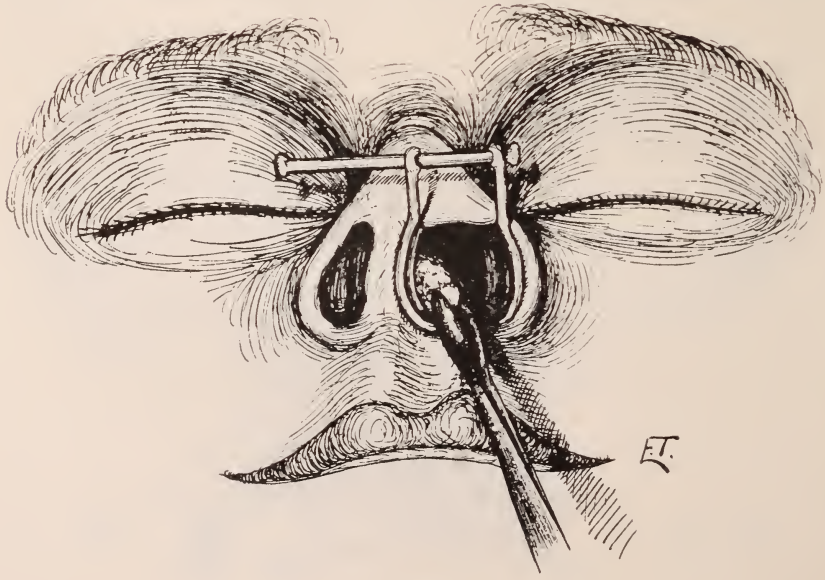
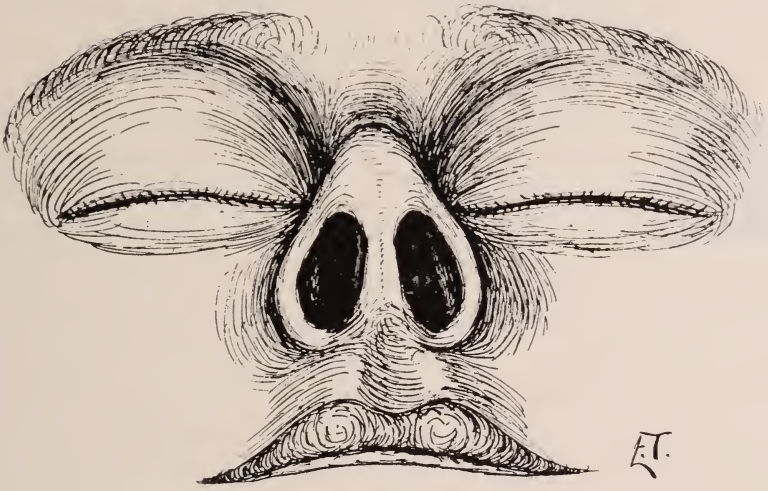


Fig. III. Showing the periosteal elevator being used to peel up a flap over the surface of the exostosis. After detaching the flap of mucoperiosteum as far back as necessary, the chisel is again inserted



and used to pry out the wedge of bone as shown in Fig. IV.

After the adherent membranes are loosened the bone may be removed by a pair of angular forceps, as shown in Fig. V.

Having removed the maxillary crest and its bony excresence, we now proceed to push over the cartilage somewhat past the medial line and apply some strips of lintine to keep it in place. Should the deviation extend to the vomer or ethmoid plate the blade of an Adams' forceps is inserted on the convex surface and the anterior edge cracked over. This practically frees the cartilage of its bony framework both along its base and posteriorly, so that it readily adapts itself to a new position.

The advantages claimed for this procedure are its simplicity, the short time in which it can be done (ten minutes), the little chance of sloughing of the flap and no danger of perforation. Furthermore, it conserves to a greater degree the integrity of the mucous membrane as its nutrition is not impaired, as is the case when the cartilage is removed to a large extent. It leaves a healthy membrane free from non-secreting dry spots.

In my opinion this method will be found available and preferable in from fifty to sixty per cent. of the cases of septal deformity which apply to us for treatment.

150 West Fifty-ninth Street.

AN INTERESTING CASE OF MASTOIDITIS

George A. Shepard, M. D.,
New York.

IT is not conservative surgery to open every mastoid which shows any signs of acute inflammation, yet there are symptoms which call for immediate operation. A year or two ago a case came to my notice, as consultant, in which an aurist twelve hours after making a paracentesis found a profuse discharge and a temperature of 103°. He refused to bear the responsibility of the case if he were not allowed to open the mastoid at once. As the above symptoms were not unusual I advised against operation and treated expectantly and in five or six days the discharge had stopped and the perforation closed. This favorable result does not answer the question as to how long the surgeon should wait before opening the mastoid cells when acutely inflamed, but it does indicate that under intelligent observation an operation can be deferred for a few days until nature has been given a fair chance.

The following case does not redound to the credit of the writer but its history is cited in order that others may be saved from a similar mistake.

S. W., aged 76, was first seen May 12, 1914, giving the following history: Two weeks ago had pain in the left ear and at the same time there appeared a slight swelling over the left zygoma. After two days there was little or no pain in the ear but the swelling slowly increased. Symptoms presented were membrana tympani normal; temperature normal; non-fluctuating swelling the size of a hickory nut in the zygomatic region but no tenderness over mastoid. The patient was put in the hospital, antiphlogistine applied and hepar given internally. After one week the swelling was larger and fluctuation appeared. A free opening was made under local anaesthesia and two ounces of pus evacuated. A probe, passed back, entered the zygomatic cells and irrigating fluid passed down the Eustachian tube into the throat. A curettage of the cells seemed to remove the necrotic bone, and because of the age of the patient and the fact that he refused to remain in the hospital longer it was decided to let the case rest, hoping that with

free drainage nature would cast off the carious bone. Drainage was kept free for two months but during the vacation period the opening was allowed to close and the patient was discharged as cured.

In September swelling over the mastoid was observed. A simple mastoid was made and the posterior wall of the canal was found to be necrotic and the mastoid cells were filled with pus. The sinus and dura were exposed and presented normal appearance. The first two dressings showed the mastoid and tympanum perfectly clean. At the third dressing the tympanum was filled with creamy pus and deep pressure under the mastoid tip caused an increased flow. A radical operation was immediately performed and the floor of the tympanum was found to be necrotic. A thorough curettage of the tympanic floor laid bare the jugular bulb with pus welling up from a sinus along the jugular. As the temperature was normal and there was no pain the lateral sinus was not opened. At the end of a week a swelling appeared just below and anterior to the mastoid tip. This was incised and a probe passed from the opening nearly to the floor of the tympanum.

For two weeks the flow of pus gradually decreased and then it stopped for several days. This was followed by pain in the occiput and an extensive swelling of the neck appeared extending back to the median line. Pressure midway between the mastoid and the median line caused pus to exude both from the tympanum and from the opening in front of the tip. Irrigating fluid forced into the opening in the tympanic floor passed into a cavity and was lost to view, but an increase could be observed in the swelling in neck. An incision was made two inches back of the tip extending down to the occipital bone, without opening into the pus cavity, even though a heavy dressing forceps was pushed through the tissue along the bone anteriorly and posteriorly.

As the swelling and pain continued, after two weeks another incision was made to the bone one inch posterior to the first opening, with negative results. During this time the epidermatization of the cavity of the mastoid was proceeding in a normal manner and the temperature was normal. The cervical glands below the tip became swollen to the size of a butternut. Both of the incisions in the neck healed kindly without any suppuration. On the seventh day the posterior scar protruded and fluctuation appeared. An incision opened

into a large cavity which extended to the median line and nearly to the foramen magnum. This cavity was flushed daily with a solution of iodine and every fourth or fifth day was painted with the tincture. All discharge ceased at once from the tympanum and from the opening in front of the tip. In November the patient was discharged cured. The mastoid scar was somewhat depressed, but there was no serious deformity. During the progress of this tedious case various remedies were administered. Examination of the pus showed mixed infection and mixed vaccines were injected, but without any apparent effect.

The temptation was great to tie the jugular as the pus seemed to come from the bulb, but as there was no temperature and no swelling along the course of the vein it was decided to be inadvisable. The tract which opened in front of the tip was so close to the exit of the facial nerve that any radical measures at that point would probably have severed that nerve; hence it was simply cleansed and packed.

In the light of present experience the mastoid should have been freely opened in May and thus many months of tedious treatment and danger to life probably avoided, but, considering the age and temperament of the patient, that course did not seem at the time necessary.

Conclusion: A swelling in the zygomatic region accompanied by a history of fairly recent acute ear symptoms and deafness should be treated as an operable mastoiditis.

859 Seventh Avenue.

PAPILLOMA OF THE LARYNX

ROBERT MORTIMER JONES, M. D.,
New York.

MRS. L. V., aged 30 years, was admitted to the eye department of the New York Ophthalmic Hospital for examination and treatment on December 3, 1914. The diagnosis was episcleritis.

Because of a complete aphonia, the ophthalmologist referred her to my clinic for examination on the same day.

The patient, a large, well nourished and well developed woman, gave a history of aphonia for two years. The loss of voice occurred just one week after the removal of the faucial tonsils, and the patient attributed the aphonia to the operation. She had been under treatment for tuberculosis of the larynx for some time before her admission to the Ophthalmic Hospital. She was in a highly excitable and nervous condition, and at the first sitting it was impossible for her to control the muscles sufficiently to allow examination of the larynx.

The examination of the nose revealed a chronic hypertrophic rhinitis, with a slight deviation of the nasal septum to her right, and springing from the nasal septum on the right side near the floor of the fossa were two well developed papillomata.

Thuyarine oil was prescribed, to be dropped into the nose, ten drops in each nasal fossa twice a day, also to be used in an atomizer for the oro-pharynx and larynx.

The extreme nervousness and apprehension of the patient prevented a satisfactory examination of the larynx until the fourth sitting, when a large papilloma was seen attached to the anterior portion of the larynx, covering the anterior half of the vocal bands and extending downward at least one inch below the bands into the trachea.

The tumor almost filled the lumen of the larynx, leaving but a small opening on each side, near its posterior portion, rendering respiration exceedingly difficult, especially in the recumbent position. The patient was unable to lie on her back. The growth not only covered the vocal bands anteriorily, but was attached to the upper and under surfaces and to their free margins, and at the anterior commissure

it seemed to be attached for a short space to the wall of the trachea. The distal end of the tumor could be seen only when it was pulled up between the vocal bands.

The patient was anxious to spend the holiday season with relatives in the country, and permission was granted. She was away from the city about two weeks, during which time the tumor increased in size rapidly. Respiration became more difficult. On her return to town immediate operation was advised. Incidentally, one of the clearest lessons to be learned from this case is the necessity of keeping a patient with a similar condition under constant observation; never to relax vigilance for a moment, for, in this instance, the rapid growth of the tumor would undoubtedly have caused suffocation in another week or ten days.

The removal of the tumor was as follows:

Half an hour before the operation the patient was given a hypodermic injection of morphia sulph. 1/4 gr. and atropin 1/150 gr.

She was in an exceedingly nervous condition, and had to be assured time and again that there was no cause for worry, as everything would be all right.

After the parts were thoroughly anesthetized with a twenty per cent. solution of cocain, the removal of the tumor was begun.

It was necessary, first, to increase the space for breathing, and this was accomplished by pulling the tumor up between the vocal bands. With a Moritz-Schmidt laryngeal forceps using both vertical and lateral tips, the tumor was removed piece by piece from the distal end, until about one-third of it had been removed.

This accomplished three things: It increased the breathing space, made the lower end of the tumor clearly visible, and made it safe to attempt removal of the tumor in larger pieces.

As the patient was getting somewhat tired and was almost hysterical, it was decided to hasten the operation, and, as the base of the tumor was broad, to cut near the base or point of attachment.

With the small forceps the tumor was cut through at this point, separating it piece by piece until it hung by a small amount of tissue. It was then grasped with the forceps and a mass about a half-inch in length was twisted from the remaining point of attachment. The removal of this large piece gave plenty of room for breathing, so it was decided to let her rest and better her condition as much as pos-

sible before removing the remainder of the tumor.

Two weeks after the first operation the second was performed. The remainder of the tumor, which covered the upper surface of the anterior portion of the vocal bands and the anterior portion of the wall of the trachea, was almost entirely removed, and two days later, much to the surprise of the patient, she was able to use her voice for the first time in more than two years.

At the second operation the Krause laryngeal punch tip was used, with the universal handle, great care being exercised that there was no injury to the vocal bands.

It is the opinion of some laryngologists that it is unwise to cut too deeply with the forceps into the tissue at the point of attachment, but to depend upon the chromic acid crystals, fused on a probe, for the destruction of the remaining portions of the tumor at its base. It has been proven that this procedure not only destroys every particle of the tumor, but prevents its recurrence. For ten days after the second operation the patient was directed to spray the larynx with thuyarine oil four times a day, and it was remarkable how much of the tissue of the tumor remaining disappeared under this treatment. Four applications of chromic acid have been made, the thuyarine oil spray is continued, and the patient has taken internally thuya Ø and bryonia $2x_1$, two drops, four times a day. After the use of the thuyarine oil in the nose for two weeks the patient blew out one papilloma, and a few days later while examining and treating the nose, the second tumor was wiped out on the cotton applicator, no operation having been performed on the nose.

The pathologist of the Ophthalmic Hospital reported the tumor a papilloma, with no signs of malignancy.

In laryngeal conditions where there is a doubt about the diagnosis it has been our practice and teaching to advise against the removal of a portion of tissue for examination under the microscope, because, in malignant tumors a portion of tissue removed from the surface of the tumor in many instances will not reveal the cancer cells; the tissue must be from the body of the tumor and the trauma and disturbance of the growth act as a stimulus, and the morbid process advances much more rapidly than under usual conditions. It has been likened to putting a bundle of dried twigs on a smouldering fire.

In the March 13, 1915, issue of the *Weekly Bulletin* of the Depart-

ment of Health, city of New York, was printed an article corresponding so exactly to our experience and teaching along this line that it seems apropos to quote the salient points as presented.

"When shall a portion of a tumor be excised for diagnosis?"

"Some time ago the suggestion was made that this department call attention to the dangers to be apprehended from a biopsy in cases of suspected cancer. Our correspondent pointed out that 'it is no indifferent matter to cut into a cancerous area; it is well recognized that this procedure may heighten the malignancy of the growth, often converting a relatively benign lesion into a very rapidly growing one; and that it favors metastases.

"'This is especially true in those cases where, either through the lack of asepsis on the part of the physician or because of the unclean surface of the lesion, a secondary inflammation follows the biopsy. * * *

"'If a biopsy is necessary (and it frequently is necessary) the section should be made in such circumstances that the radical operation may follow either at once or within a few days. The patient's welfare is best served if the suspected cases are sent to the surgeon at once and the surgeon should defer the making of the probatory section until the patient has been admitted to the hospital, so that there need not be any delay between the establishing of the diagnosis and the operation.'

"Before issuing the warning suggested by our correspondent, the matter was referred to the American Society for the Control of Cancer.

"After consideration by the Executive Council of that society, a special committee was appointed to prepare a statement to cover the questions raised.

"In transmitting this to the department the committee asks us to point out that it is hardly possible adequately to cover this important subject in so brief a statement.

"The committee, however, believes that, broadly speaking, the advice here given will serve as a general guide.

"There are two important questions concerned when it is proposed to remove a portion of a suspected malignant tumor for diagnosis—one, the advantage gained by microscopical examination, which usually furnishes a positive diagnosis of the nature of the disease, and, second, the danger of aggravating the disease by trauma.

"1. It is universally agreed by surgeons and pathologists that in a large group of cases the former advantage decisively outweighs the latter danger.

"It is, therefore, a universal practice to support the clinical by a microscopical diagnosis in cases of reasonable doubt.

"In the opinion of some of the best authorities this practice has justified itself.

"In fact, since the gross diagnosis of malignancy in tumors is difficult and sometimes impossible, it seems proper to facilitate as far as possible the means of securing accurate microscopical diagnosis.

"The necessity of making such diagnosis will be determined by the skill of the clinician.

"Some are more experienced in the field than others.

"In general, the biopsy becomes desirable when the clinician, whoever or wherever he may be, is in doubt, and a decision urgent. Some capable authorities would go much further and maintain that it is of importance to the patient that the exact type of the tumor should be determined before the operation.

"2. Against these considerations stands the danger of aggravating the disease by trauma.

"The extent of this danger will depend on the nature and the position of the tumor and must be judged in each instance from all the factors in the case.

"To cut through the skin into a malignant tumor of the breast and remove a piece for examination is generally discountenanced.

"The whole tumor should be removed, or the whole breast, and the whole mass subjected to examination.

"Not a few errors in diagnosis result from the excision of inflamed tissue on the edge of a tumor, the malignant area being missed.

"These errors occur in the breast, prostate, and with comparatively inaccessible growths in various regions. Unless a tumor can be accurately located it is better not to cut into it for diagnosis.

"In general, it may be said that incisions into actively growing, deep-seated, malignant tumors should, if possible, be avoided.

"Such a trauma may disseminate tumor cells through the vessels, or permit unnecessary extension to the skin or surrounding tissues, or accelerate growth by relief of capsular tension.

"On the other hand, there is little danger from the excision by a

clean cut of a sharp knife of a suitable portion of any superficial growth of skin or mucous membrane.

"Under all circumstances it is highly important to avoid rough handling, kneading or crushing the tissues.

"The wisdom of a biopsy may often depend on the possibility of obtaining a reliable opinion from the microscopist, in the absence of which it is better to rely on clinical judgment."

136 Madison Avenue.

Observation of nystagmus through the closed lids. (1) The eye muscles are all at rest. (2) There being no effort at fixation after-rotation nystagmus is twice or thrice longer, and may be aroused by weaker galvanic and caloric stimuli. (3) Closed eyes lessen vertigo and contribute to the patient's comfort. (4) With indicators attached to the lids the eye movements may be magnified, and (5) graphic records made.—*Laryngoscope*, August, 1914.

A NEW TREATMENT OF MIDDLE EAR DISEASE

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New York.

JURISTS are paying daily increasing attention to diseases of the naso-pharynx as causative agents in affections of the middle ear. Examinations to determine the condition of the sound conducting apparatus include inspection of the nasal fossae and the naso-pharynx, and almost invariably show the presence of more or less discharge from the posterior nares or the mucous membrane of the naso-pharynx. In the recording of case histories voluntary or responsive statements of middle ear troubles having followed "a cold in the head or catarrh" will be heard. There are many patients who deny any "catarrhal" troubles, and declare in answer to the question, "Where do your colds settle when you contract one?" that they never have a cold nor nose trouble. However, an inspection of such a patient's pharynx and the view of follicular hypertrophy which appears so often, lead one to suspect that the individuals "take no thought unto their noses." The notice of such quantities of mucus present as plugs or strings in the naso-pharynx of patients complaining of ear troubles, and the statement in a recent text-book that the Eustachian tube might be closed by a plug of mucus in its pharyngeal orifice lead us to speculate upon the dangers of blowing particles into the middle ear by inflation. Questions as to the occurrence of such an unhappy result of inflation addressed to aurists of wide experience were answered by the statement that it did occur but so rarely that it was only a very improbable danger. However, that improbable danger was a reality early in our experience, and a very stubborn otitis media suppurativa followed Politzeration and ran from an acute to a chronic condition. Only a few months ago we heard of an acute otalgia following in about twenty minutes an effort by a well-known physician to relieve by the Valsalva method a slight stuffiness in his ear, and that condition running into an acute mastoiditis which presented serious and baffling complications and almost brought a useful life to an early close. These experiences led us to believe that some method of less persistent danger should be

found.

Inflation of the middle ear is made a routine in examination and treatment of diseased conditions in order to learn, first, whether there is patency or closure of the Eustachian tube; second, what is the condition of the tubo-tympanic spaces as to the presence of exudate, and also to restore a condition of normal air pressure where a lowered pressure is believed to exist. Catheterization of the tube is done by some as a means of conveyance for medicated spray or vapor. Is it too much to assume that there is interference with the patency of the Eustachian tube of an ear which shows a retracted membrana tympani, together with the subjective symptoms of stuffiness, deafness and head-noises, and where the pharynx shows evidence of chronic inflammation with or without hypertrophy? Are we approaching the limits of presumption to decide that the mucous membrane lining the middle ear and Eustachian tube is excreting fluid in somewhat the same proportion as the lining of the nasal fossae and naso-pharynx, and conclude that a free discharge or exudation in the latter cavities is also present in the former? It doesn't seem as though the risk of forcing bacteria into a cavity like the middle ear is worth the corroboration of such assumption when we have already in evidence such probable proof.

The normal Eustachian tube is supposed to show its inner walls in coaptation except when in the act of swallowing the pharyngeal muscles, by their contraction, open and close them. One of the objects of inflation is to force open these inner walls which may have become adherent as a result of the presence or partial organization of inflammatory product. It is claimed that the opening resultant from inflation is not temporary, but that the dilation may become permanent. Is not one of the deplorable results of a chronic non-suppurative otitis media an abnormally patent Eustachian tube?

Another result of middle ear disease to be combated is the ankylosis and the thickening and loss of mobility of the membrana tympani. These two conditions, as well as the swelling and closure of the Eustachian tube, are results of the inflammation by continuity originating in the tissues of the nose and pharynx. Therefore any treatment directed toward the dissipation of the tubo-tympanic inflammation which failed to allay the exciting inflammation in the nose or pharynx would seem to be efforts directed towards curing the result while the

cause was left to continual activity. It is our opinion that the turgescence and exudation of the aural tissues will subside more quickly and completely if the cause alone be treated and removed than if the exciting factors be ignored and prolonged treatment be directed toward the tubo-tympanic condition.

During the past twenty months non-suppurative catarrhal inflammations of the tubo-tympanic cavity have been treated by a method of nasal treatment and pneumo-massage *without any inflation,* and the results have been pleasing alike to patient and physician. Many of the patients treated gave histories of nasal treatment both local and operative, but not directed toward the accessory nasal sinuses. In nearly every case there were present symptoms of inflammation in the sinuses which cleared after the treatment.

When the treatment is begun the patient usually calls every other day for two weeks, and then the treatment is continued at the same or less frequent intervals, according to the results of the tests. With the Siegel otoscope the air in the external auditory canal is alternately rarified and condensed from ten to twenty times. The force exerted should be very mild at the start and gradually increased as the membrana tympani shows increase of mobility. In one case, where there was a very marked retraction of the drum head and what looked to be thickened bands of tissue running through it, the patient complained of severe pain when massage with the Siegel was attempted. However, as the retraction lessened and the mobility increased the pain on manipulation ceased. This massage should always be very gentle at the start and never attempted unless the drum head is distinctly visible, for it would be an easy matter to tear through atrophic areas. In most cases, but not all, there will follow a slight injection of the blood vessels along the long process of the malleus, and the radiating superficial vessels of the membrana tympani will become prominent. Best results seem to follow the gentler massage, which is not followed by an intense injection of the drum head.

Following this, the Dowling argyrol tampons are placed and left for a period of from ten to sixty minutes. After removal of the tampons the cavities of the naso-pharynx and nasal fossae are thoroughly douched with a mild alkaline solution propelled from an atomizer, this followed by an oil spray to the surfaces of these cavities and the inhalation of an oil vapor. Where the nasal pharynx showed consid-

erable hypertrophy of tissue (not adenoids, which should be removed by surgery) Lugol's or an argyrol solution is applied by an applicator.

The treatment is completed by massage from thirty to one hundred and twenty seconds over each ear, induced by a bell-shaped glass cup and an electric motor. The massage cup is round, about two and one-half inches in diameter, with a rounded edge to prevent cutting into the tissues. The cup is placed over the pinna and rests upon the skin from just anterior to the tragus around posteriorly to include the mastoid process. Moderate pressure to secure suction by the cup is made. The position of the cup has to be varied in order to secure suction, for, owing to bony prominence, it will not include the mastoid process in all cases, but rest anterior to it or anterior to and above it. The strokes of the motor should be timed to give about one hundred and twenty to the minute, and should not be severe enough to cause pain. The patient will describe a "tickling pressure" deep in the external canal and in some cases will speak of a drawing sensation in the tissues corresponding to the course of the Eustachian tube. Although tests show the auditory acuity for the watch to be diminished immediately after this treatment, patients almost always declare relief from the stuffiness in the ears. Needless to say the respiratory passages are more free and many speak of a clearer feeling in the head. Treatment between office calls consists in the application of some nasal spray or cerate and the administration of various remedies according to the symptoms.

No theories regarding the action of this form of treatment will be hazarded at this early stage. The following results have been noted, viz.: The relief of nasal and pharyngeal congestion and the removal of discharge by the tampons, which removes an exciting factor in tubal and tympanic inflammations. The non-use of the Eustachian catheter removes any excitation of traumatic reaction about the orifice of the tube. An air douche of twenty pounds pressure will in many cases cause a condition similar to an acute rhinitis, and it is not improbable that the omission of an air douche forceful enough to penetrate to the tympanic cavity may remove another exciting cause of inflammatory reaction. Nature may have planned the architecture of the nasal passages and the Eustachian tubes so that they may act as ventilators, but not as draught flues.

Besides the improvement in hearing there was noted a lessening

of retraction and restoration to more normal position of the drum head and malleus; a slight pink color restored to gray drum heads; increased mobility; relief from stuffiness and head noises; disappearance of coughs and, what several have placed especial emphasis upon, the cessation of pain or pressure between or over the eyes, on the vertex and in the occiput. While treatment was instituted primarily for the relief of deafness and ear symptoms we can see how remote in result sometimes are the conditions which give rise to the troubles for which relief is sought. Though we stated earlier that it is our belief that ear conditions will clear quicker where efforts are put forth to remove the causative nasal or pharyngeal conditions, we do not believe that results as satisfactory will be obtained without the combined auditory treatment.

The first case which will be described is given simply to show the trend of his condition and not because of any brilliant results.

Case I. July 27. Mr. A. L. Q., aet. 30. Measles at 2½ years, followed by suppuration in both ears. Recovery complete. Scarlet fever at 12 years. Recovery complete. Always subject to head colds. At 18 or 19 years noticed hearing was failing. Treated first by family physician, who, failing, referred him to aurist. Has been under treatment by several aurists who "passed wires through tube in nose to force something open and then blew in air." Stopped treatment because of pain and lack of improvement. No treatment for last year. Hearing less than one year ago; continual ringing in ears worse in damp weather, winter, and when he has cold. Complains of vertical and occipital headaches. Raises much mucus in the morning.

A. D.	0	—	to A. D.	+	+	+	+	+
	Watch	R	W	C	C_1	C_2	C_3	C_4
A. S.	0	—		+	+	+	+	+

Both drum heads gray; retracted; opaque; cone light gone; short process very prominent. Nasal inspection: Tissues enlarged and engorged, especially the middle turbinals; slight amount of thick white discharge in nasal fossae and post-pharyngeal wall.

Tampons placed and withdrawn very slightly bleached. Very free discharge. At the end of two weeks tests the same, but patient said head felt clearer; ears less stuffed, but noises the same. Treatments weekly for one month, then bi-weekly.

October 15. Says he can hear Ingersoll watch tick when held

against ear; hears conversation better and heard a clock strike this week for the first time in five years.

December 17. Decidedly less noise in ears and head; ears feel more open, and sister who has returned after several weeks absence says she doesn't have to shout at him as she did.

April 9. A. D. 30″ 8″ Says he hears clocks about the house,
V V head noises hardly noticeable at times,
A. S. 30″ 8″ headaches gone.

Case II. February 20. Mr. M. B., aet. 35. Never any ear trouble until one year ago, when impacted cerumen was removed from left ear. Now left ear stuffed. Always had "catarrh." Thinks hearing good.

A. S.	Contact	—		to A. S.	+	+	+	+	+		18″
	Watch	R		W	C	C_1	C_2	C_3	C_4	after	watch
A. D.	72″	+			+	+	+	+	+		72″

Left external auditory canal filled by impacted cerumen. Both M.T. normal when seen. Considerable hypertrophy of nasal tissues with fairly free discharge in nasal fossae and naso-pharynx. Cerumen removed; no nasal treatment; membrana tympani massaged.

March 6. A. D. 72″ No trouble but desired test.
watch
A. S. 22″ Argyrol tampons placed for twenty minutes; ear drums massaged. To return in three weeks.

March 27.	A. D.	120″	+	—	+	+	+	+	+
	watch		R	W	C	C_1	C_2	C_3	C_4
	A. S.	96″	+	—	+	+	+	+	+

Ears and head feel clearer.

Case III. January 30. Miss M. G., aet. 21. Always delicate in health; usual diseases of childhood; many colds in head all her life. Last two years been growing deaf. Had treatment from aurist, also inferior turbinectomies both sides year ago. Hearing growing worse; cracking and snapping in ears worse damp and cold weather. Headaches on vertex. Lump in throat, can't swallow. (Uvula normal.)

A. D.	40″	+		+	+	+	+	+	
Watch		R	W	C	C_1	C_2	C_3	C_4	
A. S.	38″	+	to A. S.	+	+	+	+	+	

Much turgescence of tissues in nose, especially middle turbinals. Large follicular hypertophies in pharynx. M.T. very slightly retracted, somewhat gray; cone light tipped down.

Feb. 10.	A. D. 96″	+	—	+	+	+	+	+
	Watch	R	W	C	C_1	C_2	C_3	C_4
	A. S. 96″	+	—	+	+	+	+	+

Still has the noises the same; less headache.

May 8. Tests the same. Less noise, occasional headaches. Doesn't clear throat as often.

Nov. 3.	A. D. 180″	+	—	+	+	+	+	+
	Watch	R	W	C	C_1	C_2	C_3	C_4
	A. S. 180″	+	—	+	+	+	+	+

Noise hardly noticeable, hears conversation easier. No trouble. Lump in throat gone. M.T. clearer, no retraction.

Case IV. Mrs. R. J. C., aet. 67. Roaring in A. S. since sixteen years; stiffness from A. S. to throat, worse on swallowing. Always had head colds and much post-nasal catarrh, with recurrent laryngitis and aphonia.

A. D.	10″	+			+	+	+	+	+
Watch		R		W	C	C_1	C_2	C_3	C_4
A. S.	8″	+	to A. S.		+	+	+	+	+

Nose shows very little swelling of tissues, scarcely any discharge. M.T. gray, retracted, cone light broken, very little mobility. The discharge following tampons was very profuse. ℞ Kali mur. 1x B. i. d.

Dec. 10. A. D. 32″
Watch
A. S. 16″

Feels much better, head clearer, noise has stopped few times.

Jan. 27. A. D. 40″
Watch
A. S. 22″

Noise ceased during daytime, but still troubles at night.

Feb. 23. A. D. 52″
Watch
A. S. 44″

No noise now except when very tired or gets very nervous. Feels much better generally.

(Could the improvement in this patient's general condition have been due to the removal of some focus of absorption from the nose? The discharge following the tampons has become very slight. At no

time has there been much bleaching of the argyrol. In these days when pyorrhoea alveolaris is given so much attention as a focus for septic absorption with its resultant anemias, etc., what of the nasal sinuses?)

Case V. January 9. Miss J. S., aet. 9. Severe head cold last two months. Always subject to head colds. Last November had an abscess in left ear. Had much pain aggravated by touch or movement of pinna, followed by discharge of slight amount of yellow green pus streaked with blood.

A. D.	36″	+			+	+	+	+	+
Watch		R		W	C	C_1	C_2	C_3	C_4
A. S.	6″	—	to	A. S.	+	+	+	+	+

Both M.T. slightly retracted; cone of light lengthened, somewhat gray. Red tender spot near bend on anterior wall of left canal, very sensitive.

Nasal inspection showed considerable engorgement and redness of tissues enlarged turbinals with large quantity of discharge.

Jan. 17. A. D. 40″
Watch
A. S. 16″

Jan. 24. A. D. 40″
Watch
A. S. 40″

Jan. 31. A. D. 55″
Watch
A. S. 48″

These cases have been selected to show the effects of treatment upon conditions of varied length of duration and varied age of the patients. It is early to predict anything certain with regard to permanency and efficacy of this treatment. The start is highly encouraging in results and further reports will be made.

HOMOEOPATHIC MATERIA MEDICA AND THERAPEUTICS

REMEDIES IN EPISTAXIS

DONALD MACFARLAN, M. D.,

A bleeding from the nose is one of the most common affections imaginable. It is well in evidence in many diseased states, both of a constitutional and local nature. Aside from mere topical trauma, which is mechanical in both genesis and treatment, we often see the condition either as one of the many prodromata of self-limited infections, as the result probably of cerebral congestion and brain disease, or as the local manifestation of a generalized arterial, venous or even blood defect. A knowledge of the pathogeneses of different drugs is therefor of prime importance at times, in correcting this very annoying symptom. Following are some indications which are of undoubted service.

Camphor. This drug in the higher attenuations has produced in the healthy prover (by means of the Fincke preparations) hemorrhage from the nose, occurring once a day or oftener; it was difficult to check, weakened the prover very much, who had never been troubled in like manner before. This has been verified often in many provers. *Camphor is one of the most effective of all remedies in persistent nose-bleed.* The other distinguishing features, such as the coldness of the bodily surface, the tendency to sub-normal temperature with the attending general weariness, the "blue-ing" and goose-flesh state of the skin in general, all direct towards the employment of this great nose-bleeding remedy.

Terebinthina. Allied closely to camphor, as a product from a gum-bearing and terebinthinate tree, is turpentine itself. It likewise *has a selective affinity for bleeding mucous surfaces.* It both cures and produces on the healthy symptoms of cold in the head with attendant sore nostrils, which are disposed to bleed. It also affects hearing in such a way that one's own voice (or others') sounds unnatural; on the healthy it also causes sounding and humming in the left ear as of a sea-shell near to the organ; talking loudly is very painful to the ears. There is a disposition to bleed from all mucous surfaces

with this remedy.

Hamamelis virginica. This remedy is particularly suitable in passive oozing bleeding conditions. It is particularly called for in hammering and throbbing states of congestive fullness. It is often highly useful in flooding females who are subject to congestions of the head as well as the pelvic viscera.

Secale cornutuum. This is indicated wherever bleeding is more or less similar to hamamelis. It is probably the most useful remedy in venous varicosities that we possess that has been proven on the healthy. As calcarea carbonica is essentially a remedy most often indicated before the first decade of life, so is secale on the other hand most suitable in the declining years of pre-senility and brittle arteries. In fact, it is mainly a senile, rigid arterial, and failing circulatory remedy if such terms are admissible. For venous engorgement and tortuosity, dry gangrene, and advanced sclerosis which are attendant on bleeding states of almost any character it does very efficient work.

The death of Count Witte. There appears in the *London Times* an interesting note concerning the death of this great man.

"Petrograd, March 13th.—Count Witte died tonight of meningitis. A few days ago he contracted a slight chill, which resulted in a mild attack of influenza. His doctors afterwards diagnosed inflammation of the ear, and this extending to the brain he became delirious and died without regaining consciousness."

ABSTRACTS

Reports for the year 1914 from the Ear and Throat Department, Royal Infirmary, Edinburgh. Not long ago in our Journal there was an article in review of one thousand cases as they came to a clinic in one of our large Eastern cities. Much can be gleaned from such statistics and it is not difficult to draw exact conclusions from such large reports. There appears now the report from Logan Turner's Clinic in Edinburgh. Twelve hundred and seventy-seven cases with nasal affections appeared, among which there were

Deflections of the septum	367
Perforation	11
Rhinitis, acute, subacute and chronic	181
Membranous rhinitis	1
Inferior turbinate enlargement	262
Polypoid turbinates and polypi	85
Purulent rhinitis	17
Atrophics (non-fetid)	26
Atrophics (fetid)	47
Neuroses (incl. asthma)	85
Simple tumors	3
Malignant tumors	1
Acecssory sinus cases	115

of which 47 were chronic central suppurative,
7 pansinusitis,
5 chronic frontal,
2 chronic sphenoidal sinusitis.

Oral sepsis	8

The tables are very complete, yet they show that in spite of the large number of cases seen, certain conditions are relatively rare. For instance, there are but few atrophics (we are often led to believe them very common because of the chronicity of their trouble); we seem to see a great deal of the disease. Simple and malignant tumors gave only four cases. Sinusetes show one hundred and fifteen; they are increasing in number of late because we are more able to diagnose them and, too, because we often are looking for them.

There are eight cases of oral sepsis—another subject we have heard so much about of late—as a matter of fact there are many cases of bad mouths that we pass over without much notice, because we seldom find the grave symptoms we hear so much about. The reviewer reported figures that very closely correspond to this interesting series and has found the breadth of vision given by such tables very interesting. *Jour. Laryngol., Rhinol. and Otology*, XXX, 4, April, 1915. Douglas Macfarlan.

Intermittent Claudication of the Larynx. Dr. Garel reports an interesting case of a country curate who exhibited sudden spasmotic aphonia. "He began to give me the story of his troubles and had spoken but a few words, at the end of about ten seconds, when his voice weakened rapidly, to end in an aphonia most complete. He would rest his voice for a few minutes and could resume conversation as though nothing had happened, then the attack would come on anew." It was peculiar that the affection did not disturb his singing voice unless he tried to "stretch a note or to sing falsetto." He, peculiarly enough, found it convenient to sing his conversation. Anger exaggerated his trouble. The case proved most obstinate and has not as yet responded to treatment. Rest would be of benefit only temporarily. This follows with the results found where the disease exists in the musculature. J. Garel, *Ann. des Mal. de l'Oreille du Larynx*, XL, 6, 1914. Douglas Macfarlan.

Inefficacité du Néo-salvarsan das la kératite Lérédo-syphilitque. Seven cases are reported treated exclusively with neo-salvarsan (no other treatment previously); syphilis was demonstrated clinically and by the laboratory in each case. The conclusions are: (1) Neo-salvarsan, like mercury, cures keratitis from acquired syphilis, arresting the disease and preventing a similar attack; (2) neo-salvarsan will not cure keratitis depending upon hereditary syphilis; it neither arrests nor shortens this disease nor prevents an attack in the other eye. Camille Fromaget, *Annales d'Oculistique*, Septembre, 1914.

J. L. M.

Les ophthalmies en Cyrénaïque. From observations in Tripoli during the Italo-Turkish war, January-July, 1912. Bedouins, whose life is quite primitive, with no hygiene nor vaccination, frequently lose their sight from ocular complications of variola, and also from firearms' accidents. The scattered population and open air life account for the rarity of contagion, and infectious ophthalmias are rare, as are

cataract and glaucoma. Purulent ophthalmia occurs; is about as prevalent as it is in Egypt. Seventy-one per cent. of the population have trachoma. One hundred and twenty were examined with the skiascope (because they are illiterate); one was emmetropic and all the others were hyperopes. N. Farïd, *Annales d'Oculistique,* Septembre, 1914. J. L. M.

Le traitement chirurgical du glaucome secondaire. Based on the cases of secondary glaucoma operated at the hospital Lariboisière from 1904 to the end of 1913; that is, cases in which acute, subacute or chronic increased tension complicated manifest lesions of the eyeball. On first impression this study is very unfavorable to surgical treatment of secondary glaucoma. Comparing results obtained from the same operations by the same operator with identical technique one is struck by the difference there is between the cases of acute and chronic glaucoma and those of secondary glaucoma.

Very few of these cases could be followed for as much as a year. In secondary glaucoma durable and happy functional results are the exception, the visual disturbance being a result not simply of the hypertension, but of the primary affection which preceded it. Secondary glaucoma from iritis seclusion—seven cases. Each operation healed normally; in one there was hemorrhage in the anterior chamber which was absorbed very slowly. The therapeutic effect, immediate or remote, in six of these cases was relatively satisfactory, at least as to the ocular tension. Many of the patients had lost their sight almost or entirely before presenting for treatment. Four of this group had an iridectomy and three sclerecto-iridectomy; one of the latter had previously undergone posterior sclerotomy and iridectomy. In one patient the iridectomy was still efficacious at the end of four years, the others were observed for only a few weeks. In one case neither iridectomy nor trephining the sclera could reduce the tension to normal.

Glaucoma scondary to iridocyclitis—twenty-one cases; eleven treated with iridectomy and ten by sclerecto-iridectomy. Only twice (both sclerecto-iridectomy) was there any escape of vitreous; in one—fluid vitreous following severe gumamtous irido-cyclitis with blindness—the operation was made, successfully, to cure irritation from hyper-tension; in the other escape of vitreous accompanied anterior

chamber hemorrhage and the vision, almost nothing, was absolutely lost. These sclerecto-iridectomies were done according to Lagrange and to Fergus-Elliot, respectively. In two cases the operative trauma seemed to light up a chronic inflammatory process—in one ulcerative keratitis, and in another acute iridocyclitis going on to atrophy of the globe.

Glaucoma secondary to lenticular lesions—five cases reported. Generally operation is not very satisfactory in this class of cases, yet it is called for because they are most frequently very rapid and painful; we are satisfied (he writes) if we can relieve the symptoms of irritation by reducing tension to normal, and adds that inclusion of a little vitreous in the glaucoma sclerocorneal wound constitutes an unfavorable condition even in absence of infection.

Posterior secondary glaucoma—accompanying vascular lesions. The hypertension returns soon, but the irritation symptoms are ameliorated even when the tension has regained a high degree. It is important to know that the existence of retinal hemorrhages is not an absolute contraindication of operation which may be necessitated by the pain; enucleation is evidently better if vision has been completely lost. Symptomatic secondary glaucoma. Iridectomy lowers tension for only a very short while; of course if ocular tumor has been diagnosed enucleation must be performed at once.—V. Morax et A. Fourriére, *Ann. dOculistique,* Oct., 1914, J. L. M.

Uveite sporotrichosique avec gomme sporotrichosique episclerale secondaire—absence de toute autre localisation sporotrichosique decelable. V. Morax. An interesting case. It was diagnosed only by making a culture (microscope failed) from the single drop of thick yellowish pus drawn with difficulty (by a syringe) from the scleral swelling.

A man aged 66, never sick, about the middle of April, 1914, had moderate pains in the left eye (without any cause) and a progressive failure of vision. June 18th the sight was lost; eye appeared normal, except the slightly irregular pupil was immobile and the fundus, on account of the vitreous, could not be examined. Atropin failed to dilate. Tn., pressure not painful. Chronic useitis was diagnosed and, although Wassermann was negative, the patient was put—ineffectually—upon two courses (mercurial) of gray oil intramuscularly. Early in October the left eye was found to be injected, without conjunctival

secretion, and the sclera presented a rounded swelling a centimeter in diameter, which occupied the sclero-ciliary region between the four and six o'clock meridians and reaching to 5 mm. from the limbus. This was of yellowish color as if suppurated and covered with dilated conjunctival vessels; it was "assez resistante" to pressure and so diagnosed episcleral gumma. Ocular movements not modified. One mm. of blood in the anterior chamber. Tn., media and pressure as above. A diagnosis of sporotrichosis was established from the culture; five days later—pain now kept the patient awake and the anterior chamber was half full of blood, and the patient was put upon *iodid of potassium,* 2 grammes a day (which he stood well).

A new general examination found no lesion, of skin or viscera, active or cicatricial that could be connected with the infection.

One week later the hyphaemia was completely absorbed, the iris clear, there was no tenderness on pressure, the gumma was smaller and the conjunctival injection more limited to its region. Five days subsequently o.s. well opened, no longer inflamed; tn., no more tenderness nor irritation. The serum test of spore agglutination negative. December 28th, externally the globe appears normal. Vision lost. Identification of sporotrichum Beurmanni was made on different artificial media.

The same succession of lesions from endogenous infections is sometimes observed in uveal tuberculosis, more rarely in uveal syphilis. The lesson is: Give *pot. iod. early,* and do not overlook sporotrichosis as a cause.—*Annales d'Oculistique,* Octobre, 1914, J. L. M.

Interesting findings in the examinations of the ears of institutional children. Among children in institutions for the deaf the number of cases that can be improved astonished the author. In the first institution he examined eighty-nine cases and found twenty-five of impacted cerumen: two of foreign modies (bead and wad of cotton), two eczema of canal, and six "chronic purulent"—forty per cent. defects. In a Manhattan institute for the deaf, of two hundred and forty-nine examined, fifty-three were impacted cerumen, seven eczema of canal and eleven chronic purulent—twenty-eight per cent. This had an attending otologist who "examined the ears of all children every month." He then examined two hundred and seventy-five cases of "one institution of hearing children" and found sixty-three with impacted cerumen, five eczema of canal and five chronic purulent—

twenty-seven per cent.; and in another, of two hundred and fifty-six cases, ninety-five had impacted cerumen, four eczema of canal, eleven chronic purulent and one foreign body.

It is very important to determine whether an affected child is absolutely deaf or still has enough hearing to be trained with the aurophone so that it may retain what voice it has and be taught to converse in a nearly normal tone.—Samuel K. Frost, *Long Island Medical Journal*, March, 1915. J. L. M.

Removal of immature and mature cataract by the intracapsular method. A good description with some points not usually dwelt upon. Worth reading, although, indeed, no one should attempt this operation without instruction and practice upon animals' eyes.

Before the operation take the ocular tension and the blood pressure, examine the secretions of the conjunctival and lacrimal sacs. Cut the lashes from the outer half of the upper lid. The author (taught by W. A. Fisher) irrigates the cocainized eye with warm bichlorid solution from an irrigator held half a meter high, "to cleanse all the folds of the conjunctiva." The incision is made with one onward sweep of a Dorland-Smith knife two and one-half millimeters longer than that ordinarily manufactured. Blade held at fifteen degrees from the plane of the iris; puncture and counter puncture as close to the iris as can be with safety; upper margin of the wound is in the cornea about two millimeters from the sclero-corneal margin.

Next, "with a small pair of curved forceps placed on the cornea astride the incision, the operator expresses the iris through the wound and at the same time grasps it and snips off a small portion" for the iridectomy. A tenotomy hook is placed flat against the cornea with its point "three millimeters" from the lower margin, then firm pressure is directed upon the eyeball in the direction of the optic disc. The patient should help here by keeping the eye fixed steadily. In a few seconds the zonular ligament will rupture, the lens will mold itself to fit the opening and slowly emerge. "At this point we must stroke it out slowly and leave all the vitreous behind." Both eyes are bandaged; not removed for nine days. "It is pure folly" to attempt this operation retracting the lids with a speculum, even if held by an assistant.—John J. Smith, *Pacific Coast Jour. Hom.*, March, 1915.

J. L. M.

The vital force: an experimental demonstration. What is the

vital force? The animation of the organism by the immaterial being, which controls the functions of life. It is a form of energy, like electricity, etc., and like these forces manifests ("maintains") itself only through special forms of matter under certain well defined conditions. Special forms of energy are made manifest through particular forms of matter.

The author means by the term, "life," motion, sensation and volition; "organization, growth and reproduction are not life, inorganic crystals manifest all these." "The power of becoming alive does not reside inherent in matter, but in the life force which possesses it;" *e. g.*, magnetization of iron and not of wood, by an induction coil.

Dissolve one grain of silicic acid in half an ounce of distilled water; boil for five minutes; while boiling place one drop on the glass slide and examine under the microscope. Inside of ten minutes the drop will be swarming with particles which, as the fluid dries away, move as with life and volition—they "manifest every evidence of suffering," even to that of attacking their fellows in the universal struggle to keep within the fluid. Examine drops with an immersion lens every twenty-four hours for several days and note the gradual increase of motile power. The active particles attack and feed upon the larger chunks of the acid, even dragging them some distance. To build living cells from mineral compounds: Boil one grain of lime phosphate in one-half ounce of distilled water for ten minutes; transfer to a sterile one-half ounce bottle and cork tight. Then boil for ten minutes (also in a six-ounce test-tube to prevent boiling over) one grain phosphate of magnesia in one-half ounce of distilled water, cork tight in another sterile one-half ounce bottle; label and set both aside in a good light for five days at 70° or 80° F., then mix and cork for forty-eight hours in a sterile ounce bottle. Living cells come into existence immediately upon exposure to the air; they may be seen to originate, develop, show a wide range of movements, "express excitement and sensation" (!), struggle, die and "return to the inorganic elements from which they came." Each living cell may be seen to have a nucleus—of lime particles—which does not die at the death of the cell but continues its life-like movements like those of silicic acid. "It is evident that the living cells are possessed by a magnetic force . . . they are actuated by a force which possesses them; that this force has the power of volition is self-evident."—Charles

W. Littlefield, *Pacific Coast Jour. Hom.*, March, 1915. J. L. M.

Spigelia for orbital neuralgia. C. W. B., aet. 50. For fifteen years has had attacks of orbital neuralgia of the left side, from which he has had relief only by sedatives. The pain has become more or less constant, seems to be excited by the most trivial causes, and persists for hours and days. The pain, of a burning, throbbing character, begins back of eyeball, seems to involve the whole orbit and extends to the supra- and infra-orbital branches of the fifth nerves. Worse lying down. A careful examination of the eye showed no diseased condition and no uncorrected error of refraction. Spigelia 6x was given every three hours. The attacks lessened in intensity and frequency and seven months have now elapsed without any recurrence. J. H. Buffum, *Pacific Coast Jour. Hom.*, March, 1915. (Dept. Eye, Ear, Nose and Throat.) J. L. M.

Vision improved by homoeopathic prescribing. Dr. L. B. Hurd reports that great improvement of the vision followed a prescription made, not for any condition of the eyes, but for the general gouty condition which was present. A woman beyond middle life was suffering from gouty deposits in the joints, particularly of the fingers, which were stiff and painful from the enlarged joints. She complained that although she had been operated upon for cataract her sight was still very dim, and received a dose of sulph. 30x, followed by lycopodium 6x, which not only cleared up much of the gouty deposits, but produced a marked improvement in the sight. *Pacific Coast Jour. Hom.*, March, 1915. (Dept. of the Eye, Ear, Nose and Throat.) J. L. M.

Prunus in glaucoma. Mr. L., aet. 53. For two years recurrent iritis, attacks lasting usually for several weeks. Now has cataract, anterior synechia, increased tension and only perception of light. For the last year has had much aching deep in the eye, which lately has become continuous. In addition to this pain he has had for some months past attacks of severe pain in the post-vertex, crushing in character as if there was a great weight on top of head pressing it forward. This pain is somewhat mitigated by either heat or cold. Is just recovering from an attack a few days ago, which came on at 10 p. m. and lasted five hours. Now has a sensation of something in the eye, cornea appears steamy and with some loss of epithelium, lens opaque, iris of a dirty color, veins about the corneal margin enlarged and tortuous, no perception of light and eyeball very hard. Iridectomy

advised and declined. He wanted a homoeopathic prescription pure and simple; while he had no confidence in it, or anything else, he had been prevailed upon to try it. Prunus spinosa 6x was given him to take four times a day. He reported in two weeks that there had been no attacks of pain and that the constant aching in the eye had disappeared. The eye looks much clearer in color, tension less. It is now four months and there has been no recurrence of the attacks, but from the very nature of the disease an attack will occur, and then the real value of the action of prunus in the case will be evidenced by the control of it. J. H. Buffum, *Pacific Coast Jour. Hom.*, March, 1915. (Dept. of the Eye, Ear, Nose and Throat.) J. L. M.

Ultimate results of operations for chronic sinus disease, chronic tonsillar and tonsillar-adenoid disease of the middle ear (continued). Chronic suppurative ethmoidal sinusitis "can never undergo resolution nor be cured by operation." After all has been done (surgically) in the majority of cases there remains a little purulent discharge which is much increased with every acute rhinitis. Frontal sinusitis. The end results from operations give the best results and easier of obtaining than in either the antrum or the ethmoids. While with the Killian operation the suppuration was completely cured, Beck never does this now on account of the deformity.

In the sphenoid the best results are obtained; cures of chronic suppuration are almost unusual. The particular operation is immaterial if only one makes a wide cut laterally toward the posterior sphenoid, "dropping the bottom out of the cavity;" *i. e.*, enlarging the nasal antero-posterior diameter. He likes the Mosher operation in that by first cleaning out the posterior ethmoid cells before removing the middle turbinal makes it impossible to mistake a large post-ethmoidal cell for the sphenoid.

Non-suppurative sinus disease, chronic, and polypi are principally an ethmoid trouble—hyperplastic ethmoiditis; very rarely is antral operation necessary. We see ten cases of non-suppurative sinus disease to one of suppurative. Almost every case is cured of the nasal obstruction and headache; but he was not so fortunate with the neuralgias nor the general neurotic conditions, although in most cases they were improved. Smell and taste return with relief of the pressure, but Beck's most striking result has been the relief of ocular symptoms. Irritation of the fifth nerve or of the sphenopalatine ganglion may

be due to the sinus disease or follow the operation; his best results for this have been secured by medicating the sinuses (Sluder) with one per cent. carbolic acid solution or injecting a one per cent. phenol in alcohol into the sphenopalatine ganglion, the other branches of the fifth nerve and even the Gasserian ganglion. Beck does not operate chronic adhesive otitis media for relief of tinnitus nor improvement of hearing. But operations do cure chronic suppuration. Seven patients ossiculectomized between 1903 and 1905 for chronic suppuration still remain cured and their healing is just as good as that of any case radically operated upon. Cessation of the discharge will depend (as in chronic suppurative sinusitis) a great deal on the underlying pathological condition of the temporal bone. The tuberculous and syphilitic osteitis demonstrated in the bone chips removed during the operation by subsequent microscopical examination must be healed by constitutional treatment. The only instance where he packs after the radical mastoid—splitting and packing within the external canal—is for retention pocket from reformation of adhesive bands in the upper posterior part of the cavity.

Closure of the Eustachian tube has been one of our author's saddest disappointments. It is his practice now, primarily or secondarily, to close its pharyngeal end, "drawing the palate forward as in the adenoid operation."

End results as to hearing: The radical mastoid operation does not destroy the hearing and certainly does not improve it. By using the electrically driven burr there is much less danger of starting up an old latent labyrinthitis. Beck believes in doing the Heath operation on the adult when both ears are suppurating and the one (for this operation) still has good hearing; he then contents himself with removing the greater source of retention in cleaning up the entire mastoid, but leaves the attic and middle ear intact. But he now (same indications) does Bondy's operation—entering the attic without disturbing the annulus tympanicus or any portion of the ossicular chain—with the aid of the electrically driven burr (which makes it quite possible). In his two cases he got practically normal hearing and considerable improvement in the suppurative process, but not a dry ear.

He has done Phillip's operation for chronic suppuration in a number of small children—the simple operation, drain posteriorly and allow the cavity to heal without removing the posterior canal wall—

with as good results as if from the Heath operation. But this may leave a larger retroauricular depression and scar. Joseph C. Beck. *Jour. Oph. and Oto-Laryngol.,* February, 1915. J. L. M.

Intracapsular cataract operation. J. R. Hoffman presented a case operated eleven days ago (preliminary iridectomy some months previously) healed with no irritation, V. 20/40 with correction, which, William A. Fisher said, it is fair to presume will be 20/20 in a couple of weeks. It has been necessary to use the spring speculum during the incision, as the patient could not stand the retractor, despite recocainizing the eyes, although the Fisher lid-hook was tolerated during delivery of the lens. As the lens appeared to be of the intumescent variety, which readily tumbles, "the point of the extracting hook was placed over the border of the lens and pressure made directly downward toward the feet," whereupon the capsule readily gave way below and the lower edge of the lens presented in the wound, making the delivery practically free from loss of vitreous, since the upper part of the capsule in this class of cases ruptures after the lens is out of the wound and, the eye being turned up, there was no pressure exerted on that medium.

Michael Goldenburg presented a patient with a left fundus typical of albuminuric retinitis, but urinalysis (of mixed twenty-four hours urine) made five times was always negative in every respect; Wassermann was negative; ethmoids and sphenoids revealed nothing upon inspection or Roentgen-ray plate; blood pressure 125; heart negative; nothing pointing to brain tumor; general physical condition good. Vision 10/200, fields contracted and no central scotoma for red or green. Clark W. Hawley said the condition about the macula resembled two cases he reported some time ago, typical of a toxaemia; both of his were cured by curing the patient's constipation.

Experiences with the intranasal partial resection of the tear sac were generally discussed with approval. J. Sheldon Clark recommends it preliminary to cataract. Occasionally a high submucous partial resection of the septum may have to be made, the pyriform process and anterior end of the middle turbinate resected.—*Jour. Ophthal. and Oto-Laryngol.,* February, 1915. (Chicago Ophthal. Soc.) J. L. M.

Mastoiditis and mastoid abscess without suppuration from the middle ear, etc., and without any apparent middle ear inflammation.

Dr. Welton was impressed by the number of these cases (a new phase in the subject of ear disease) which presented during the past year. He had seven such cases in 1914, with at no time any discharge from the meatus, and in two of them no evidence of any middle ear inflammation showed at all. Three intact; slightly bulged or simply injected. One case has had a discharge before the mastoid became involved. In five cases a cortical mastoid operation was done, four recovering well, and the fifth (a three-year-old boy) died twenty hours later, evidently from meningitis, as he was unconscious when operated. The remaining two cases of this non-suppurating type of mastoiditis recovered with ordinary treatment and antiphlogistic measures. Each case had pain except the semi-comatose boy and the baby thirteen months old—the last was swollen behind the ear; in the boy pressure on the mastoid would cause convulsions. Deafness was noted in all but these two cases. The author found one case of this condition—Mackenzie, in J. of L. R. & O. Carrol B. Welton, *Jour. Oph. and Oto-Laryngol.*, March, 1915. J. L. M.

Case of frontal sinusitis and ethmoiditis, with an external fistula about a quarter of an inch above the inner canthus. The fistula, of seven weeks' standing, followed six weeks of severe headache, which had been treated as a frontal neuralgia. She attributed her trouble to an accidental kick with a child's shoe six weeks before the headache developed. Immediately after removal of the middle turbinate and exenteration of the ethmoid labyrinth the discharge stopped and the case went on rapidly to complete recovery.

One of the reviewer's saddest memories is that of a man in his dispensary eye clinic in the early eighties who despite treatment went blind in each eye successively from keratitis due to infection by the purulent discharge from such a sinus on each side. He did not dare open the frontal sinus and could not induce any of the hospital's surgeons to do so!—*Jour. of Ophthal. and Oto-Laryngol.*, March. (Chicago Laryngol. and Otol. Society.) J. L. M.

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Sarah M. Hobson, M. D., *Secretary-Editor.*

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BOOK REVIEW

Cancer, Its Cause and Treatment. By L. Duncan Bulkley, M. D., Senior Physician to the New York Skin and Cancer Hospital. Two hundred and fifty pages, including index. Paul B. Hoeber, New York, 1915. Price $1.50 net.

The subject is presented in six carefully prepared lectures. He has shown by statistics collected from many authors from various geographical centers that cancer is a disease of civilization and is favored by luxurious living, including the meat diet and the free use of alcohol and condiments. In the treatment of cancer he advises, in addition to early removal by surgical means, a careful consideration of the patient's mode of living and correcting it by simple living and the abandonment of the meat diet.

Dr. Bulkley is a physician of wide experience in the non-surgical treatment of cancer. While he endorses everything of worth advocated by the surgeon he at the same time points out the error of the average surgeon in not paying sufficient attention to the medical side of the subject. He believes that cancer is the result of a constitutional disturbance brought about by improper living, the correction of which may work beneficially in certain cases even after the tumor is manifested.

This latest work of Dr. Bulkley is well worth reading by the family physician and careful study by the operative surgeon.

NEWS ITEMS

The post-graduate class at the New York Ophthalmic Hospital for the season of 1914-15 was concluded in the middle of the month of May and five physicians of exceptional ability received the special degree of Oculi et Auris Chirurgus, and one the certificate in laryngology.

Some three hundred and fifty lectures, recitations and clinics were given which included two hundred and seventy-five hours of practical clinical work. The members of the class were Dr. Fred L. Johnson, of Holly, Mich.; Dr. Charles E. Peach, Pine Grove, Pa.; Dr. Tom A. Northcott, of New York; Dr. Hugh Barclay, of New York; Dr. Arthur C. Leonard, of Kansas City, and Dr. Haskell Phelps, of New York.

Of these, Drs. Johnson and Phelps affiliate themselves with the institution as clinical assistants and Dr. Barclay as assistant resident physician, while Drs. Northcott and Peach continue post-graduate work there and in other New York clinics. Dr. Leonard returns to enter special work in Kansas City.

Dr. John J. McDermott, who has been one of the most popular and efficient resident physicians at the New York Ophthalmic Hospital, will end his period of service there July 1st and will thereafter identify himself with Dr. W. D. Rowland, Asbury Park, N. J., for the summer months.

Dr. Walter W. Oliver, of Ann Arbor, Mich., and for nine months junior resident physician, will be advanced to occupy the position made vacant on the departure of Dr. John J. McDermott.

The method of treating trachoma by rubbing the inside of the eyelids with tightly twisted cotton on a stiff cotton probe dipped in bichloride 1-1000, as practiced in the clinic of Dr. Hallett, is being introduced in the New York public schools on a large scale by Dr. M. B. Beals, assistant in Dr. Hallett's clinic.

News Items

Dr. Willard Thompson, who has just completed courses in the eye and ear at Philadelphia, is now located at Dixon, Ill., where he will devote his time to the specialty.

Dr. Derrick T. Vail entertained the Cincinnati oculists in honor of Dr. Arnold Knapp, of New York City, on May 17th. It was a very delightful occasion, and Dr. Knapp's friends were pleased to see him in the Queen City.

Our Secretary, Dr. Ira O. Denman, attended the Ohio State Medical Meeting in Cincinnati.

Dr. Florence N. Ward, of San Francisco, presented a very interesting paper before the Illinois Homeopathic State Medical Society in Chicago.

Among those in attendance at the Illinois Homeopathic State Medical Society were Dr. J. R. McCleary, of Cincinnati, Dr. Dean W. Myers, of Ann Arbor, and Dr. Askinstead, of Louisville.

A large eye, ear, nose and throat practice for sale in Philadelphia. Inquire of Dr. Frederic W. Messerve, Perry Building, Philadelphia.

THE JOURNAL OF OPHTHALMOLOGY OTOLOGY AND LARYNGOLOGY

CINCINNATI, OHIO

Editor: DR. G. W. MACKENZIE

Associate Editor for July: DR. GILBERT J. PALEN

CONTENTS FOR JULY, 1915

EDITORIALS

Page

Acknowledgement of Support of Contributions..... 555
Faucial Tonsils 556
Cancer 556
Announcement 557

ORIGINAL CONTRIBUTIONS

Symposium—The Faucial Tonsils:

Preface. By Gilbert J. Palen, M. D..... 560
Embryology and Physiology. By F. H. Widman, M. D..... 561
Anatomy. By J. V. F. Clay, M. D..... 563
Histology. By Edward G. Muhly, M. D..... 569
Pathology and Bacteriology. By Raymond S. Leopold, M. D..... 575
The Tonsil from the Standpoint of the Internist. By W. Rendell Williams, M. D..... 583
The Tonsil from the Standpoint of the Urologist. By Leon T. Ashcraft, M. D..... 588
The Relation of the Tonsil to the Thyroid Gland. By D. Roman, M. D..... 591
Focal Infection. By Gilbert J. Palen, M. D., and Joseph V. F. Clay, M. D..... 594
Treatment and Materia Medica. By Dean W. Myers, M. D..... 600
Tonsil Surgery and Voice Function. By Burton Haseltine, M. D... 607
Anaesthesia in Tonsil Operations. By Arthur Hartley, M. D.... 612
The Tonsil Operation. By Gilbert J. Palen, M. D..... 619
A New and Improved Trial Frame. By A. E. Ibershoff, M. D..... 638

SOCIETIES 643

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The Journal of Ophthalmology Otology and Laryngology

Vol. XXI. JULY, 1915 No. 7

EDITORIAL

ACKNOWEDGMENT OF SUPPORT OF CONTRIBUTORS

The Journal is pleased to acknowledge the numerous letters received from contributors of excellent standing offering substantial support in the form of original contributions. It is gratifying to the Editor and his Associates to have received these letters and it speaks well for the future of the Journal. As an illustration of the type of these letters we publish the following, received from Dr. Deady, Dean of the College of the New York Ophthalmic Hospital:

Dear Doctor Mackenzie:

Some time ago the surgeons of the Ophthalmic Hospital passed a resolution that a contribution should be sent to the Journal each month, the articles to be written by members of the staff in the order of seniority, and I was to be the first victim.

It has since occurred to me that we had not been asked to do any such thing and that our action might possibly be regarded as somewhat gratuitous, especially as after the meeting of the O. O. and L. Society you will probably have all the material that you require for the present. Should such be the case kindly let me know and I will try to arrange things so that you can have the copy when you really need it.

If, however, you prefer to have the matter go on as voted, I will bestir myself and send the paper in a few days. If you have any particular preference as to what line it should touch on it would be a help.

Sincerely yours,

Charles Deady.

The offer of the New York Ophthalmic was accepted in a letter sent by the editor to Dr. Deady, which reads as follows:

My dear Doctor Deady:

Your letter of May 31st received and I was pleased at its contents. I believe the object of the resolution is a good one and the carrying of it out should be fruitful to the individual contributors as well as to the institution they represent. You may therefore accept if you will the invitation from me to put the resolution into effect. We can make room for contributions from the staff of the New York Ophthalmic. With your permission I shall be pleased to call attention to the resolution with favorable comment in the editorial columns. May we have your first contribution early?

Thanking you and the Ophthalmic staff for their earnest support of the Journal, I am, Sincerely yours,

G. W. M.

Space in the Journal is open to all who care to contribute original articles that measure up to the standard thus far established.

FAUCIAL TONSILS

The bulk of the space of the present issue of the Journal has been turned over to Dr. Gilbert J. Palen and used by him and his associated contributors for the presentation of that important subject, "The Faucial Tonsils." It is a pivotal subject around which many others turn. By securing the present issue the subscriber gets the benefit of a symposium on the tonsils that is complete and up to date. No phase of the subject has been neglected. Congratulations to the contributors.

CANCER

Some weeks ago the Journal was asked to co-operate with other journals by devoting the July issue to the subject of cancer. Unfortunately the invitation came too late, for our plans had already been made and could not be changed. To those who are especially interested we desire to call attention to the fact that they will be able to secure a vast amount of information on this subject in the July issue of the various medical journals.

ANNOUNCEMENT

The associate editor for the August number of the Journal is Dr. William H. Phillips, of Cleveland, O. We make this announcement with much pleasure. Dr. Phillips needs no further introduction to the members of the O. O. and L. Society nor to the readers of the Journal. He is working hard to make the August number the equal, at least, of any that have preceded it.

THE FAUCIAL TONSILS*

EMBRYOLOGY AND PHYSIOLOGY

F. H. Widman, M. D.
Professor of Embryology and Physiology, Hahnemann Medical College, Philadelphia.

ANATOMY

Joseph V. F. Clay, M. D.
Demonstrator of Otology, Hahnemann Medical College; Assistant Otologist Hahnemann Hospital; Junior Laryngologist, Women's Homoeopathic Hospital, Philadelphia.

HISTOLOGY

Edward G. Muhly, M. D.
Emeritus Professor of Histology, Hahnemann Medical College, Philadelphia.

PATHOLOGY AND BACTERIOLOGY

Raymond S. Leopold, M. D.
Pathologist to the Women's Homoeopathic Hospital, Philadelphia.

THE TONSIL FROM THE STANDPOINT OF THE INTERNIST

W. Rendell Williams, M. D.
Clinical Professor of Physical Diagnosis, Hahnemann Medical College; Assistant Physician to the Hahnemann Hospital, Philadelphia.

THE TONSIL FROM THE STANDPOINT OF THE UROLOGIST

Leon T. Ashcraft, A. M., M. D.
Professor of Genito-Urinary Diseases, Hahnemann Medical College; Surgeon to the Hahnemann Hospital; Genito-Urinary Surgeon to the Women's Homoeopathic Hospital, Philadelphia.

*A series of papers read before the Philadelphia Eye, Ear, Nose and Throat Society, April 12, 1915.

THE RELATION OF THE TONSIL TO THE THYROID GLAND

D. Roman, M. D.
Clinical Professor of Surgery, Hahnemann Medical College; Surgeon to St. Luke's Hospital, Philadelphia.

FOCAL INFECTION

Gilbert J. Palen, A. B., M. D., and Joseph V. F. Clay, M. D.

TREATMENT AND MATERIA MEDICA

Dean W. Myers, M. D.
Professor of Ophthalmology and Otolaryngology, University of Michigan Homoeopathic College.

TONSIL SURGERY AND VOICE FUNCTION

Burton Haseltine, M. D.
Professor of Laryngology, Hahnemann Medical College, and Laryngologist to the Hahnemann Hospital, Chicago, Ill.

ANAESTHESIA IN TONSIL OPERATIONS

Arthur Hartley, M. D.
Professor of Anaesthesia, Hahnemann Medical College; Assistant Surgeon to the Hahnemann Hospital and Women's Homoeopathic Hospital, Philadelphia.

THE TONSIL OPERATION

Gilbert J. Palen, A. B., M. D.
Professor of Otology, Hahnemann Medical College; Otologist to the Hahnemann Hospital; Senior Laryngologist to the Women's Homoeopathic Hospital, Philadelphia.

PREFACE

For the past two centuries the faucial tonsils, as local offenders, have occupied the attention of the practitioner and many references will be found, in medical literature, concerning their diseased conditions. In the early nineteenth century we find closer attention being given to them as to their clinical association with certain well defined systemic disorders. During the past few years they have been brought to the foreground as very important portals for the reception and elaboration of invading organisms.

With the gradual evolution of knowledge concerning these lymphoid structures it has seemed fitting that we should attempt to gather from the various departments of medical, surgical and laboratory workhouses, that which is known to be the latest and best with the object of presenting a working summary of the faucial tonsils. Also it is hoped that the reading of the pages to follow may stimulate further closer study and co-operation of the laryngologist, the internist and laboratory investigators in perfecting and increasing our knowledge of these important structures.

We are enabled to present this symposium through the courtesy of colleagues who are well-known specialists in their various departments and we wish, at this time, to express to them our deep sense of appreciation for their courteous co-operation and their contributions.

GILBERT J. PALEN.

EMBRYOLOGY

In the human foetus the development of the faucial tonsils begins in the third month, their formation being associated with the early differentiations of the pharyngeal pouches.

By a marked increase in breadth the first and second pouches very rapidly acquire a common pharyngeal opening corresponding to the "primary tympanic cavity" of Kastschenko, or the "pharyngo cleft" of Piersol. The second pouch is gradually taken into the walls of the pharyngeal cavity.

Between the anlages of the first and second pouches the palatine ridges are interposed and definitely separate the two pouches. In the second pharyngeal pouch an arched lateral fold forms the sinus tonsillaris (Hammar). Projecting into this tonsillar sinus is a small entodermal elevation, named the tonsillar tubercle. This soon flattens and forms a fold surrounding the tonsillar sinus in front and below, thus completing the plica triangularis. This plica is frequently found in the child and even young adult, stretching as a triangular fold of mucous membrane from the anterior palatine arch backward for a variable distance over the tonsil, to which it frequently adheres by its free margin, thus forming a pocket between it and the tonsil. The apex of this triangular fold is directed upward in the direction of the soft palate and its base lies toward the tongue. Beginning before birth and continuing after birth, the anterior plica usually undergoes a progressive reduction, so that in many individuals it disappears completely. The retrotonsillar plica develops later than the anterior plica and is a less persistent adult structure.

The histological differentiation begins with the ingrowth of solid entodermal buds from the wall of the tonsillar sinus into the underlying embryonic connective tissue. These are at first solid epithelial tubes which soon develop secondary buds. By a degeneration of their central cells these buds become hollowed out and thereby open upon the floor of depressions which have, in the meantime, formed about the surface points of origin of the buds. These depressions represent the crypts of the fully developed tonsils.

The lymphoid tissue of the tonsils is formed around the epithelial

buds. From these points lymphocytes penetrate into the stratified epithelium, and are first recognizable in human embryos of about 110 mm., at which time the tonsils have already acquired their characteristic features.

The origin of the lymphocytes is still an open question. According to Retterer they grow from the epithelial cells forming the tonsils. Stöhr thinks that they migrate from the neighboring blood vessels, while Hammar contends that they take their origin from the embryonic connective tissue surrounding the epithelial buds of the developing tonsils.

The formation of the lymph follicles takes place very slowly. The separate and well defined follicles with the characteristic germinal centers are not completed until the third month after birth (Stöhr).

PHYSIOLOGY

At the present time nothing definite is known regarding the function of the faucial tonsils.

Concerning their possible use to man, several working hypotheses exist.

Some contend that they protect the body against infection (Briege-Görke). Others ascribe to them an amylolitic and a glycolytic function, the formation of an internal secretion and still others the function of forming new lymphocytes. None of these theories is as yet acceptable.

According to Briege and Görke, who have promulgated the so-called "Durchströhmung's Theory," the tonsils serve as a protection against pathogenic infection. This is brought about by a flow of lymph through the tonsils from the interior to the surface, with an actual fluid outflow through the interstices of the epithelium. This serves to protect against influx of germs from the surface of the tonsils, thus allowing the ingress of pathogenic germs only when changed internal or local conditions interfere with normal outflow of lymph.

That the tonsil is a point of entrance for many forms of infection is a fact too well established to be readily controverted. Furthermore, there is no clinical evidence that complete removal of the tonsils is in any way injurious.

ANATOMY

From the median line of the soft palate, mingling with the muscular fibers at the base of the uvula, we find extending downward, outward and backward a thin ribbon like muscle which is lost in the muscular tissue of the postero-lateral pharyngeal wall and fuses with the stylo pharyngeus muscle. This muscle is the *palato pharyngeus*, and covered with mucous membrane, constitutes the posterior faucial pillar. Extending from the base of the uvula, downward, outward and forward is a second muscle, broader, longer and more or less triangular in outline. It finds its attachment at the base and side of the tongue and is known as the *palato glossus muscle*. With its mucous membrane covering it constitutes the anterior faucial pillar. These two muscles, diverging from the base of the uvula, outline a space more or less triangular in shape, the depth of which, from the free margin of the pillars to its base, which is formed by the constrictor muscle of the pharynx, varies in different instances. This space constitutes the tonsillar fossa. In the upper extremity of the tonsillar fossa is a small triangular area, lodging in some cases the superior pole of the tonsil, while in others it is simply bridged over by a fold of mucous membrane forming a blind pouch. This is the supra tonsillar fossa.

The faucial tonsils are found, one on either side of the oro pharynx, within the tonsillar fossa. In some instances the tonsil, completely filling the fossa, is readily discernible, while in others none of the tonsillar tissue is seen until the anterior faucial pillar is hooked forward, as occurs with the so-called "fish gill pillars of Haseltine." The tonsil is not a perfectly globular organ, as is frequently described, for the dimensions of the average case show the perpendicular longer than the horizontal.

No more comprehensive description of the plica tonsillaris can be given than that which appears in the recent work by Barnes on the tonsil:

"Extending from the free internal border of the anterior and posterior pillars are two folds of mucous membrane, the plica triangularis and the plica retro tonsillaris.

"The triangular plica is constant but varies in extent. In the greatest development it is a right angle triangular web of mucous

membrane, its apex attached to the uppermost part of the inner border of the posterior pillar, its perpendicular attached to the inner border of the anterior pillar, its base inserted into the lateral pharyngeal wall just above the base of the tongue along a curved line corresponding with the line of attachment of the tonsil inferiorly. It covers, from above downward, a progressively increasing area of the anterior surface of the tonsil, encircling the lower pole like a sling.

"The retro tonsillar plica is inconstant, but when present is continuous above with the apex of the plica triangularis and with the same structure below, when the inferior insertion of that fold extends to the posterior pillar. In the latter case the combined folds form a complete ring around the internal border of the sinus."

The clinician is impressed by the fact that the plica appears to play an important part in the apparent size of the tonsil. He has frequently observed that after severing the plica, along the line of cleavage, that the tonsil which appeared small was in fact quite large, the plica keeping the tonsil back in the fossa. This can be demonstrated in any case in which there is a well formed plica by incision, when it will then be seen that the tonsil presents beyond the arches into the pharynx. Upon this submerging effect of the plica we base our classification of tonsils:

1. Free tonsils or those in which very little or no plica is present.
2. Submerged tonsils, or those in which the plica is well developed.

"The large free tonsil (see Fig. 1) lacks the resisting action of the plica and will be seen extending beyond the anterior arch. In these cases the anterior arch will be well defined. The plica is poorly developed and loosely attached to the tonsil. This tonsil is easily thrown into the pharynx by the action of the constrictors. At various points over the entire faucial surface of this tonsil will be seen the openings of the tonsillar crypts in varying number.

The large submerged tonsil (see Fig. 3) does not have the cryptic appearance over its entire pharyngeal surface, but in a varying portion of its lower surface appears smooth, due to the presence of the plica which covers the crypts, while, above the line of the plica, crypts are readily seen giving the tonsillar surface an uneven appearance. Upon casual observation, in these cases, the anterior arch appears to extend out over the anterior lower surface of the tonsil. Upon closer observation, by depressing the tongue, thus placing the palato glossus

muscle on a stretch, it will be seen that the anterior arch stands out and that the larger portion of that which appeared to be arch upon the surface of the tonsil, is simply plica.

It is interesting to observe this type of tonsil and its behavior when acutely inflamed. It is forced upward into the supra tonsillar fossa by the restraining influence of the plica and meeting obstruction there, forces its way outward over the edge of the plica so that in acute tonsillitis the entire pharyngeal surface is seen studded with cryptic exudate.

The small free tonsil (see Fig. 2) presents only slightly beyond the anterior arch and it is found, in these cases, that the plica is either poorly developed or lacking and the tonsillar fossa usually shallow.

The small submerged tonsil (see Fig. 4) is practically the same as the large submerged tonsil and is held back by the plica. The tonsillar fossa in these cases is also usually shallow.

The faucial tonsil receives its blood supply from branches of the external carotid.

A small vessel is found springing from the dorsalis linguae which, passing between the mucous membrane and fibrous layer of the plica, finally breaks up into small vessels, which apparently enter the tonsil substance. This vessel has been called the tonsillar branch of the dorsalis linguae and it is severed when the plica is divided.

A superior tonsillar vessel, entering the fossa near its upper extremity, passes downward between the capsule of the tonsil and the muscular aponeurosis for a distance of one-half inch, then pierces the tonsil. According to J. Leslie Davis, this vessel is formed through an anastomosis of branches of the ascending palatine (a branch of the facial) and the descending palatine (a branch of the internal maxillary).

Fetterolf describes a posterior tonsillar artery, a branch of the ascending palatine, which enters through the palato pharyngeus muscle and pierces the tonsil between the equator and lower pole of the tonsil. The same investigator further describes three inferior tonsillar vessels: one, a branch of the dorsalis linguae, enters the tonsil below the equator, the other two vessels (the largest vessels going to the tonsil) are branches of the tonsillar branch of the facial. One of these branches courses between the capsule and the fossa wall and enters the tonsil well down near the base of the tongue.

There are two principal venous channels of practical importance in the tonsillar fossa. One will be found coursing along the inner edge of the palato pharyngeus muscle from a point near the upper pole to a point near the base of the tongue, where it joins a large vein piercing the superior constrictor muscle. This empties into the pharyngeal plexus. The second smaller vein can be found extending downward along the posterior edge of the palato glossus muscle. This empties into the lingual vein.

The lymphatics draining the tonsil empty into the deep cervical chain beneath the sterno mastoid muscle, from here to the thoracic glands and eventually to the thoracic duct.



Figure 1. Large free tonsils. The anterior arches appear sharply defined. As there is no restraining plica, the tonsil extends well into the pharynx.



Figure 2. Small free tonsils. The characteristics same as above, but the tonsil is much smaller.



Figure 3. Large submerged tonsils. The anterior arches are illy defined due to the presence of the plicae triangularis which are holding the tonsils back in the fossae.



Figure 4. Small submerged tonsils. The same characteristics as above, but the amount of tonsil tissue much less.

HISTOLOGY

The faucial tonsils belong to the class of lymphoid or adenoid tissue structures and are a part of the great lymphatic system.

In order to discuss the tonsillar structure it will be necessary for us to study lymphoid tissue in general and make references to some of the other lymph structures. According to Ferguson, lymphoid tissue is classified as a connective tissue. Connective tissue, however, is only a structural element of all the lymphoid tissues. The general position and associations of the tonsil alone will demonstrate the non-connective principle of lymphoid tissue.

Some of the lymphoid structures are microscopic and others are macroscopic. In some instances powerful lenses are needed to find a few lymphocytes imbedded in the connective tissues, while others are sufficiently large to see with the naked eye, such as the very small pin point nodules in the sub-mucosa of the rectum, or the thymuc if the anterior chest wall is removed in infants, or the compound lymph nodules as they are imbedded in the tissues of the mesentery or in the connective tissue of the axillae, or macroscopic as in the case of the tonsils without the removal of overlying tissue.

In the tonsil we have a macroscopic mass of lymphoid tissue located in the sinus tonsillaris, between the anterior and posterior pillars of the fauces, more or less loosely attached and not completely imbedded in connective tissue, as we find in the other of the macroscopic structures mentioned.

This fact of peripheral location, or rather surface location, assists materially in the differentiation of the tonsil from other of the lymphoid structures from a microscopical viewpoint. Having a surface location, its outermost covering will be the characteristic covering or lining of the cavity in which the structure lies. That is a rule of nature. In this instance the mucous membrane of the pharynx and of the buccal cavity is lined with stratified squamous epithelium. In the other of the lymphoid structures, which are imbedded in connective tissues, there is a distinct capsule surrounding them, developed from the connective tissues.

What is lymphoid or adenoid tissue? The term adenoid was applied to the lymphoid tissue at the time that these macroscopic structures were viewed as glandular structures. The term lymphoid

is preferable, as it assists in conveying the knowledge that the tissues are composed, in part at least, of the cellular elements, lymphocytes.

The simpler definition of lymphoid tissue is, that it is composed of reticular connective tissue plus lymphocytes.

What is reticular connective tissue? It is a form of connective tissue composed largely of cellular and fibrous elements. It develops a supporting tissue, which in its structure is very loosely arranged, so as to permit the free access of the cellular elements, of the structure in which it is found, to the lymph as it passes from the capillary blood vessels of the tissue.

Reticular connective tissue could be classed as a type of embryological connective tissue, or more correctly speaking, it is a type of connective tissue in which the characteristic development of the adult fibrous connective tissue was interfered with, through the rapid development and infiltration of cellular elements not necessarily of connective tissue origin.

To understand this one should study the development of the fibrous connective tissues from the union of the stellate cells of mesoblastic origin and the development of the so-called syncytial structures. A syncytium is a union of numerous smaller cells, for the development of larger multi-nucleated structures, in which the cytoplasm will increase and subsequently develop the fibrous elements of the tissue. The nuclei, with a small amount of cytoplasm, will eventually develop the adult connective tissue cells. Reticular connective tissue is an intermediate state between the purely embryological connective tissue and the adult fibrous tissue. Syncytial tissues are not limited to the connective tissues.

Reticular connective tissue is made up of small fibres which interlace freely. They are arranged as small bundles and the interlacing of the fibers leaves a large number of irregular spaces, which are filled in with lymphocytes. At the junction, or at the point where the fine bundles cross, stellate cells of various sizes will be found. These are the cellular elements of the reticular connective tissue. In specimens ordinarily prepared and of moderate thickness, these connective tissue cellular elements are frequently masked or hidden by the large number of lymphocytes present.

The cells of the reticular connective tissue have larger masses of cytoplasm than the lymphocytes; are not spherical, but flattened cells,

stellate in outline and their cytoplasm is distinctly acidophile in reaction. Some claim these cells to be phagocytic in power and others have apparently demonstrated nuclear fragmentation in the cytoplasm. They are termed the endothelial cells of the reticulum or the endothelioid cell plates.

In frozen sections of the fresh lymphoid tissue, from which the looser cellular elements have been brushed away, the specimen rapidly fixed in 10% formalin and stained, these endothelial cells may be partially demonstrated. In very thin sections 6-8 microns of the medullary portion of a compound lymph node, these endothelial cells may be seen with the fibers of the reticular connective tissue bridging over the lymph sinuses.

The endothelial cells have the power, through the action of certain irritants, to rapidly multiply, and this, in conjunction with the rapid development of the lymphocytes under similar conditions, explains many of the pathologically destructive changes of lymphoid tissues.

The cellular elements of the lymphoid tissue, other than those of the reticular connective tissue, are various, the vast majority of them being the large and small lymphocytes, the smaller predominating. They are, as a rule, so closely packed as to completely obliterate the fibrous and cellular elements of the reticulum.

The small lymphocytes are small spherical cells averaging about seven microns, the size of an erythrocyte, with a comparatively large nucleus and a small rim of cytoplasm, which at times is hardly distinguishable. The nucleus is highly chromatic and it is partially due to this fact, coupled with that of scant cytoplasm, that a mass of lymphoid tissue is so distinctive under microscopic observation.

The large lymphocytes are about two or three times as large as the smaller lymphocytes, they have a greater mass of cytoplasm and they are at present in much smaller percentage. In these the nuclear material is not so susceptible to the nuclear stains. The greater rim of cytoplasm has very few or no fine granulations.

The large and small lymphocytes form the vast majority of cells present, but in addition to these we find other types of cells, with various nuclear and cytoplasmic characteristics. Some show nuclei indented, others show an apparent fragmentation of the nuclei, generally held together by small bands of chromatic material. These are the transitional and poly-morpho-nuclear leucocytes. These cells

show the various types of granulations seen in leucocytes in general, namely, eosinophilic and neutrophilic granulations. In inflammatory conditions of the tonsils large lymphocytes and leucocytes may be present with basophilic granulations.

The presence of these different types of cells will suggest that in all lymphoid tissue we have manufacturing plants for the transitional poly-morphonuclear leucocytes. Again we may consider that these cells being present in such small numbers in the smaller masses of lymphoid tissue, are simply carried to these structures by the general blood currents and there migrate to the surrounding tissue. But in view of the fact, that karyokinetic figures, evidences of cell division, are frequently seen in the cells of all lymphoid tissue, we incline to the former theory and must assume that the tonsils are to a degree haemopoietic organs.

Lymphoid tissue is arranged throughout the body in three different ways. The most common is a diffuse arrangement, then a follicular and lastly the arrangement into elongated cylindrical masses.

The particular arrangement has nothing to do with density of the structure. A diffuse arrangement may be very dense or only a few cells may be present. Diffuseness of lymphoid tissue depends upon the regularity or evenness of distribution of the cellular elements, over larger or smaller areas, without the formation of definite microscopic masses.

Follicles of lymphoid tissue are circumscribed masses, in which the cellular elements are more closely aggregated. They may be oval or spherical in transection and they show a greater density at the periphery of the follicle, the lighter central area being termed the germinal center. It is at this point that cells in active cell division are found, evidenced as mentioned before, by the presence of the karyokinetic or mitotic figures. Follicles are generally outlined with a condensation of the reticular connective tissue and they may be isolated or massed together. In the solitary follicles of the submucosa of the rectum, we find the masses of lymphoid tissue separate and imbedded in connective tissue. In the Peyer's patches of the ileum we find an example of the aggregation of follicles.

In the tonsils there is a diffuse arrangement of the lymphoid tissue and located in this diffuse tissue, the more distinct follicles. It is the periphery of the follicle, with its condensation which makes

it so distinct from the rest of the lymphoid tissue. The tonsils are best studied, at first, with the lower magnification. The dense mass of granules are seen extending over greater areas and in this diffuse arrangement varying numbers of circumscribed masses or follicles are seen, forming a more or less regular line under the epithelium covering the free surface of the tonsils. This regularity, of follicular arrangement, seems to follow the line of the larger crypts or invaginations of the surface epithelium. In larger tonsils the follicles are distributed irregularly in the central part.

In the tonsils nearly the entire mass of lymphoid tissue is surrounded with a capsule. This is composed of connective tissue, of both the white fibrous and yellow elastic varieties and we note, from a study of the reticular tissue, that its fibers are continuous with the fibrous tissue of the capsule. This continuity of fibers points to the fact of similar origin.

From the capsule are given off trabeculae of white fibrous and yellow elastic connective tissue, which divide the larger tonsils more or less distinctly, into lobules.

The capsule is not a distinctly complete fibrous mass of connective tissue. It is rather an overgrowth of the connective tissue of the tunica propria of the mucous membrane lining the cavity of the mouth and the pharynx, apparently forming a bowl or cup-like arrangement, lining the sinus. The lymphoid tissue is developed or deposited between this capsule and the outer free epithelial covering, its amount varying in different tonsils.

The trabeculae, which arise from this capsule, are broader at the base and gradually become thinner as they approach the epithelial covering. In the trabeculae are found the larger of the blood vessels.

Voluntary muscles are in close association with the capsule, the fibers of which seem to be more or less isolated and imbedded in the connective tissue. They are in continuation with muscles of the pharynx and fauces.

Beneath the capsule and imbedded in the looser connective tissues near the location of the fossae, are distinct masses of mucous secreting glands. Smaller aggregations of secreting acini are found in the connective tissue beneath the entire capsule. These glands, in some instances, empty their secretions through long ducts into the fossae, while in others they empty into ducts which pass into the blind

extremities of the deeper crypts.

The epithelium covering the tonsils is of the stratified squamous variety, continuous with that lining the pharynx and mouth and it is composed of a varying number of cell layers. In the tonsils of infants it has a definite basal outline, the cells resting upon a loose arrangement of connective tissue. From this connective tissue are developed a number of connective tissue extensions into the epithelium, the papillae. As the deposit of lymphocytes increases these papillae are obliterated, not in fact, but apparently.

With the increased development of the lymphocytes in the body of the tonsils, large numbers of the lymphocytes migrate into the intercellular substance of the epithelium. This infiltration of epithelium is so marked at times, that epithelial characteristics are obliterated, and it appears as if the lymphoid tissue extended directly to the free surface. In the greater expanse of the surface epithelium this infiltration is not so complete, but it is in the crypts that the epithelial changes are most marked. Here we have, in addition to epithelial infiltration, marked pressure with a resulting degeneration of the epithelium and the crypts are apparently only lined with two or three cell layers. This epithelial degeneration is not uniform throughout all the crypts. It is stated that at the time of puberty, with a natural reduction of the lymphoid tissue, a regeneration of the epithelium occurs.

Invaginations or extensions of the surface epithelium into the body of the tonsils develope the crypts. Some of the former writers designated these as follicles, but we must not confuse them with the true follicles of lymphoid tissue in the body of the tonsils.

The crypts may be single invaginations of the epithelium, extending from the free surface to a depth almost reaching the capsule, while others of the crypts branch and divide as they pass into the body of the tonsils. During the growth of the tonsils, the deepening of the crypts goes hand in hand with the deposit of lymphocytes and the crypts are frequently distended with masses of migrated lymphocytes and epithelial cell debris.

PATHOLOGY

Any study of the pathological processes of the tonsil is simplified by a consideration of the unusual structure of this lymphoid follicle, its capsule and especially its crypts.

Instead of a simple mass of lymphoid tissue bounded by a confining coat of fibrous tissue, gland like in type, the adult tonsil is a sponge like gland wedged into a fossa more or less constricted at its base and diverging toward the surface to present its greatest area spread out in cauliflower-like arrangement. It is covered only by a thin capsule of epithelium and connective tissue. From the surface this capsule dips down in all directions toward the base, thus forming many tortuous and irregular clefts or *crypts*. The only opening of these crypts is on the surface, while their cavities, because of their winding irregularities, their blind extremities and their poor drainage, offer every advantage of incubation and nutrition to bacterial life. Adding to this the thinness of the walls lining these crypts and the permeability of the spongy lymphoid structure immediately beneath, it seems truly remarkable that active invasion of the organ is so relatively infrequent and exemplifies the teachings of Adami, that the opposition to the entrance of bacteria into the body tissues is not complete, but that at times a certain number is always gaining admission.

Since then this anatomical weakness prevails, the prominence of these atria is at once obvious and defines the cause of almost all of the inflammatory processes of the tonsil.

Bacteria appear in the tonsillar crypts soon after birth and in the early years of childhood. While rapid cellular proliferation is prominent, the lymphoid center of the tonsil grows rapidly and with it the crypts become deeper and filled with cellular debris and decomposing extraneous material. Normally, nature maintains a satisfactory system of protection, so that it is only at times of relative variations of such factors as drainage, state of immunity, nature of the infecting organism and others, that certain pathological processes appear. These processes obviously being reactive on the part of the human organism to the invasion of micro-organisms, or physical insults, are in a sense identical in their cellular, humoral, and exudative changes and vary only with the nature of the cause. They must be considered therefore as of various *grades*, rather than forms of inflammation.

The most prominent grade of inflammation of the tonsil is the *acute tonsillitis,* in which we have a frank reaction and rapid development, the dominant feature being irritation and reaction. As a result of the infectious medium the tonsil becomes markedly enlarged, the epithelial cells of the crypts proliferate, are cast off and with the inflammatory exudate and debris combine to distend the crypts and later exude upon the surface of the swollen turgid tonsil as yellowish patches. Within the tonsil the lymphoid cells and the reticular endothelial cells actively proliferate, the blood vessels are engorged with red cells, and active emigration of leucocytes takes place. Usually the infecting areas are quickly isolated, masses of leucocytes are walled about and the invasion is checked. More frequently, however, a slightly more severe degree of invasion takes place, some blood vessels are invaded and with the liberation of bacteria and diffusible toxin, symptoms of hematogenous infection appear. Beyond this, usually, the process is controlled and the circulatory channels quickly become sterile. The exudate and necrotic tissue are washed off or absorbed and the part returns to normal. Again at times a still severer process prevails, the invasion continues, fully developed circumscribed abscess formation results and finally discharge may take place upon the surface or through the capsule.

A further grade of acute inflammation, in which the tonsil is involved only as a part of a general inflammation of the buccal mucous membrane, is the so-called *septic sore throat* and the *membranous pharyngitis.* The former is due to infection with pyogenic microorganisms, usually the streptococcus pyogenes, is often epidemic and milk borne, or not infrequently arises as a complication of scarlet fever, erysipelas or pneumonia. The inflammatory process is evidenced by an acute phlegmonous appearance. The causative agent is severely toxic and much inecrosis of the epithelial and sub-epithelial tissue takes place, with thinning and disintegration of capillary walls. As a result, many red cells are forced to the surface and here combining with disintegrating leucocytes, conglutinate over the area forming masses of fibrin, which enmesh the exudate and debris, producing a detachable fibrinous membrane.

In the second or membranous grade, diphtheria or infection by the Bacillus Klebs Löeffler, is the true type. In this type the bacteria rarely invade the structures of the organ or the general circulation,

but act through an extremely poisonous diffusible toxin, which is highly caustic to the tissues. This toxin filters through the tissue cells immediately beneath the site of deposit of the bacteria, causing a profound necrosis. As a result the destroyed cells and inflammatory products form a fibrinous exudate, similar to or of even greater degree than that of the former type. As the caustic action of the toxin proceeds gradually deeper, areas of cells are destroyed or partially damaged and finally, the whole undergoes a common coagulation necrosis fusing into a homogenous mass—the diphtheretic membrane. If the progress of the toxin be checked or its action neutralized, the process is controlled. Gradually the opposing mass of leucocytes intervenes between the membrane and sounder tissue, digestion of the deeper layers of fibrin and necrotic tissue takes place and the membrane is freed en masse and regeneration takes place.

Peritonsillar abscess is a common complication of acute tonsillitis and implies an accumulation of pus in the peritonsillar tissues or space. According to Barnes, it is always found between the capsule and the walls of the sinus tonsillaris. The organism is the streptococcus pyogenes and as noted, follows an earlier invasion of the tonsil parenchyma. The histologic process is essentially a profound accumulation of leucocytes to the area, in such quantities as to produce mechanical disproportionment of the parts, pressure symptoms and irritation of nerve endings by the diffused toxin. This accumulation may burrow in the direction of the soft structures of the palate, or downward into those of the pharynx, or may erode the internal carotid artery or one of its branches.

Chronic tonsillitis is a term used to define many varieties of changes which may be classed as hyperplastic, cryptic or suppurative and is invariably the result of frequent attacks of acute tonsillitis.

In the first variety, the tonsil, as a body, may be markedly enlarged as a result of the frequent periods of lymphoid hyperplasia, which have failed in complete regression, the pressure from within tending to compress the crypts and smooth the surface of the tonsil.

In the second variety, the result of long continued irritation of the crypts, the tonsil is small, while the crypts are large and roomy and filled with a cheesy mass of desquamated cells and decomposing matter. This material plugs the crypts and may exude as an offensive plug, or, being retained, set up a low grade inflammatory reaction.

Ofttimes these offending accumulations are so deeply seated as to defy discovery, yet on examination, after removal, we frequently find many large and small foci of this noxious and infectious material, which we have learned undoubtedly bear an important position in the cause of many hitherto chronic and insidious infections, such as arthritis, neuritis, heart and visceral disorders, etc. Deep in the crypts this necrotic material may become infiltrated with lime salt, forming *concretions* or tonsillar *calculi*.

Occasionally a third variety, in which small localized abscess formation due to organisms of attenuated virulence, is seen. These abscesses are most often subcapsular, or they may be deeply buried in the tonsillar parenchyma.

Tuberculosis of the tonsil can occur as a primary infection, but is more frequently secondary. The histologic changes in primary tuberculosis are confined to typical tubercle formation of epitheloid cells, giant cells and a surrounding inactive leucocytic infiltration. The process rarely goes on to caseation, as a result of the ready drainage through the cervical lymph glands and so the condition is often found accidentally. Barnes found it in two per cent. of cases showing no evidence before operation.

In secondary infections from without or of hematogenous origin, the changes are essentially those of miliary tuberculosis. Caseation is, however, rarely prominent, although ulceration of varying degrees is often seen.

Syphilis. The tonsil is supposed to be a relatively common site for extra genital chancres. Direct contact may explain this and yet invasion of the mouth through infected media is by no means difficult to understand. Granting this, it may be that while the buccal cavity is relatively self-cleansing, the tonsil, as explained earlier, through its crypts containing decomposing material and anaerobic facilities, offers cultural opportunities, for the spirochaete pallida, suspiciously similar to those enjoyed by its brother the spirochaete dentium in foul anaerobic dental cavities. Conceiving such possibilities of harboring, it is easily possible to explain their entrance into the parenchyma of a tonsil handicapped by frequent inflammatory reactions. The tonsil affected is usually large of dusky red hue and presents an unhealthy whitish erosion, sharply defined on a thickened base. Glandular involvement is marked, while pain is absent or not pro-

nounced. In the secondary stage, simple, small, reddish nodules, on a catarrhal base may be noted, or the exudate may be sparse and the epithelial change only slightly active, giving the part a glazed appearance, the *opaline patches*, or more often areas of thick mucopurulent exudate on a base of thickened epithelium, producing the familiar *mucous patch*. *Gummatous* infiltrations may occur. They are deeply seated and undergo extensive ulceration. Histologically, round cell infiltration is the prominent feature and is especially of perivascular arrangement. The walls of the smaller vessels are thickened and the endothelial cells proliferated. The normal histologic arrangements are unusually distorted by these pronounced changes which dominate the field. Granulomatous arrangement, masses of epitheloid and giant cells assist in defining the process.

Hyperkeratosis is an anomalous development, in which progressive hyperplasia of the cryptic epithelium is combined with a regressive process of the tonsillar parenchyma. The stratified squamous epithelium proliferates actively. The deeper cells being in active growth, each successive layer is rapidly pushed upward, gradually flattening toward the surface, where, instead of being cast off, they accumulate in a horny-like layer, forming keratoid masses. With this tendency developed, the causes of which are not understood, the crypts are progressively distended and stretched and the lymphoid elements compressed and thinned. The fibrous changes increase and as the horny excrescence becomes heaped up some layers separate and become scaly or may be dislodged as a foreign body.

Vincent's angina consists of an ulcerative necrosis of the tonsil and buccal tissue, with the formation of a pseudo membrane of a dirty glazed appearance on a raw bleeding base. It is supposed to be due to the bacillus fusiformis and the accompanying spirillum. It is often accompanied by marked glandular involvement.

BACTERIOLOGY

The bacteriology of the tonsil has assumed important prominence in the last few years, due specifically to investigations directed toward focal infections and upon the tonsil has been riveted the cause of a great number of severe afflictions, as well as many vague systemic infections which were hitherto assumed to be mere intoxications.

Because of this work our etiology of many heart, joint, gland, lung, stomach and other visceral infections stands out remarkably and clearly exposed. What were before vaguely assumed, are now often simply understood infections and such apparently simple etiological classifications of heart, joint and visceral lesions as those of Cabot, Billings and Libman, have been largely made possible by the studies of Rosenow, Davis and others on the tonsil as a particular atrium of infection.

The organisms isolated from the tonsil, in cases suffering from general or local infections, include many varieties. By far the most prominent of these is the *streptococcus* and it is in the study of this organism in particular, that so much has been accomplished to explain the nature of its local effect and especially in defining the sphere of activity of its various sub-varieties in other parts of the body.

The *streptococcus viridans*, an organism related to the pneumococcus, is usually isolated from the mouth of the crypts or near the surface of the tonsil. It is the probable causative factor in the more insidious inflammations of the tonsil, the acute and chronic attacks of tonsililtis and is the type, undoubtedly, associated with the endocardial complications.

The *streptococcus hemolyticus* (pyogenes) is the most virulent member of this family. It is usually sealed deeply in the crypts and is the cause of the severe inflammations of the tonsil, deep suppurative tonsillar and peritonsillar processes and, of even greater significance, is the cause of the various sequelae of joint, muscle and nerve inflammation. Between these two, probably more virulent than the former and certainly less so than the latter, lie several culturally different strains of the streptococcus. These show various cultural and animal characteristics and it is in the demonstration of the transmutation from one form into others that evidence has been so convincingly exhibited by Rosenow's experiments. Most important in this connection is the observation that during various progressive phases of transmutation, the selectivity of the organism for various types of infection is changed from arthritis, endocarditis, pericarditis, myocarditis and so forth, to typical pneumonia, or starting with the S. pneumococcus reversing the phases. In this group also lies the organism of milk borne or epidemic sore throat, the *streptococcus epidemicus*, as well as the less virulent *S. mucosus*.

Thus has convincing evidence finally been presented proving the tonsil to be a most offending focus of infection; the various local processes to be true streptococcic metastases, and of greater significance the fact, that for each such secondary infection we are able to assign the most probable member of the streptococcic group as the causative agent.

Occasionally true infections due to other organisms are seen. Of these the staphylococcus, B. influenza, B. diphtheria, B. pyocyaneus are the ones found.

The tubercle bacillus was first demonstrated by Dieulafoy, who, by animal inoculation of portions of tonsils, found its presence in fifteen out of ninety-six. That true infection is relatively rare is certainly quite difficult to understand. It is, however, possible that some factor in the surroundings of the organ or some requirement of the bacillus, renders its establishment undesirable and finding ready egress, drains through into the first lymph gland of the superior cervical lymph chain. That this really takes place was shown by Wood, in 1905, in his experiment on hogs when B. tuberculosis was found in the lymph gland in a comparatively short time after swabbing the tonsil with tubercular cultures, while no trace of them could be found in the tonsil. Thus, doubtless, many cases of tubercular adenitis are established. What the danger of general tuberculosis from this path is, remains a debated question. Some claim a direct chain to the peri-bronchial glands; others hold the majority to be due to the *bovine* type, through milk contamination in children. In Sewell's series of one hundred and sixty cases of tuberculosis, thirty had tubercular lesions of the tonsil and sixty-eight had enlarged glands.

Spirochaete pallida is present in primary lesions of the tonsils and in every suspicious case should be carefully looked for, with as great diligence as in primary lesion elsewhere, to establish as early a diagnosis as possible. Here, however, confusion with the spirochaete dentium is often possible. The organism of syphilis can be differentiated from the dentium in dark field illumination, by being the more slender, more regularly curved type, having a "willow stick" motility, moving, as it were, from the middle instead of having the end to end snake-like wave of the dentium. It is also distinctly whiter and has curved ends rather than the straightened tips of the latter and finally stains faintly, while the dentium easily takes a deep stain.

The bacillus found in Vincent's angina is a fusiform or spindle-shaped organism, thick in the center and tapering toward the ends. Its length varies greatly; it is sometimes curved and stains irregularly, not unlike the diphtheria bacillus and for which it is at times mistaken. It is, however, Gram negative and non-motile, and is invariably accompanied by the spirochaete described above. These two organisms are constantly isolated from lesions of the type of Vincent's angina, definite proof, however, that they are indeed the primary etiological factors has not as yet been given. The actinomycosis fungus has been reported present in the crypts of the tonsil; here probably purely saphrophytic in character.

Neoplasms. Benign and malignant new growths of the tonsil occur and follow the same characteristics as those found in other parts of the body. Of the benign varieties the papilloma, fibroma and occasionally lipoma and angioma are the ones seen.

The papilloma is a surface outgrowth, consisting of enlarged papillae covered by dense masses of proliferated epithelium, supported in finger-like projections by a connective tissue core. These tree-like nodules branch in all directions, giving it the cauliflower or warty appearance. It is essentially a localized overgrowth, follows typical hyperplastic laws and consequently causes only mechanical symptoms.

The fibroma springs from the connective tissue of the capsule. Its predominant constituents are fully formed fibrous connective tissue cells, fibrils and blood vessels. Its growth is typical and slow. The cells are loosely arranged in wavy strands, giving it more or less of a polypoid character, although much less marked than those of the nose and throat.

Lipoma and angioma are relatively rare, the former is usually recognized only on tissue examination and consists of masses of fat cells. The latter may be diagnosed by its peculiar purplish hue and pulsating character. It consists of masses of blood vessels with a delicate connective tissue framework.

The malignant varieties include sarcoma and carcinoma. The sarcoma is a richly cellular tumor composed of masses of embryonic connective tissue cells. The growth invariably springs from certain groups of the fixed connective tissue cells, which through some aberration having reverted to the embryonic type, reproduce before

maturity and, having disregarded the capacity to functionate, exert their full activity in reproduction. At times reproduction is delayed until the stage of immature fibroblasts (the *spindle cell sarcoma*), at others, awaiting little or no growth, reproduction takes place rapidly as formative connective tissue cells (*the round cell sarcoma*). These characteristics at once explain the infiltrative growth and its malignant qualities.

The lympho-sarcoma springs from the lymphoid cells of the follicle or may be secondary to a growth of the same character springing from the glands of the neck (Hodgkins' disease).

Carcinoma may be primary in the tonsil as an atypical infiltrative growth of the epithelial cells, more often, however, it is secondary. Usually it is of the squamous cell variety, which infiltrates as great plugs of epithelium in all directions, forms many metastases and ulcerates early.

THE TONSIL FROM THE STANDPOINT OF THE INTERNIST

The internist is chiefly concerned with the clinical manifestations of diseases of the tonsils.

As practically every case of acute and chronic tonsillitis seeking medical or surgical treatment is first seen by the medical practitioner, he has ample opportunity to familiarize himself with the clinical course of such conditions. He should be perfectly familiar with the bacteriology of the tonsil and with the diagnostic appearances of the different infecting agents, where such exist; with the relation of acute and chronic tonsillar conditions to systemic disease; and he should be qualified to designate those cases requiring operation, or the attention of a specialist.

Acute tonsillitis or acute follicular tonsillitis is the commonest condition of the tonsil requiring his attention. Although called follicular or lacunar tonsillitis, the entire parenchyma of the tonsil is involved. It is distinctly a disease of childhood and early adult life.

Regardless of the infecting organism, which quite likely is already a resident of the tonsillar crypts, the predisposing factors are principally exposure to cold and dampness, with unequal chilling of the body. Combined with this, there is usually some gastro-intestinal condition, difficult to define, but associated with constipation or overindulgence in rich foods and sweets. The general practitioner will

readily vouch for the accuracy of the latter statement, when he recalls the large part such cases play in his ministrations to the children of the clientèle after the Christmas festivities.

Symptoms. An attack is usually ushered in with chilliness; a rapid rise in temperature, which may reach 101° to 104° in a few hours; headache, backache, great prostration, sore throat, and painful deglutition.

Usually one tonsil is involved at first and from twenty-four to forty-eight hours later, the other. The tonsils are more or less enlarged, evidently the seat of inflammation and the crypts soon show the characteristic exudate.

Cervical glands beneath the tonsil are enlarged and tender; the tongue is coated and the breath offensive. The systemic symptoms are quite out of proportion to the tonsillar involvement.

The attack passes off in three or four days, if no local complications develop, leaving the patient more or less prostrated. Attacks vary greatly in severity, even in the same patient and tend to recur, the latter no doubt because the tonsil is slow in returning to its previous healthy condition after a severe inflammation.

Diagnosis. Typical cases present no difficulty but the possibility of diphtheria or scarlet fever must always be considered. In diphtheria the onset is not so severe, the fever is not so high and the prostration at first not so marked, nor is the throat usually so painful. The tonsils do not protrude so much as in tonsillitis where the parenchyma is involved.

Much importance is attached to the appearance of the exudate or membrane. In tonsillitis it is typically confined to the crypts, whitish, discrete and easily removed. In diphtheria the exudate presents itself as a greyish, tenacious membrane, with irregular edges, surrounded by an angry red area. It has a tendency to spread rapidly beyond the tonsil and when removed the underlying surface bleeds easily. Unfortunately these distinctive features are not always present.

If it were the practice to take a culture promptly in every case of acute tonsillitis, many embarrassing mistakes would be avoided. It is equally good practice to administer antitoxin in every suspicious case (unless contra-indicated by a history of asthma or anaphylaxis to horse serum) without wasting what may prove to be valuable time awaiting the result of a culture. And furthermore, if the first culture

be returned negative and the clinical course still suggests diphtheria, antitoxin should be given.

Confusion with scarlet fever is not so apt to occur, although several such cases have come to our notice. Here vomiting is a more prominent feature of the onset. There is the characteristic widespread redness of the fauces, the tachycardia, and later, the appearance of the rash. Many mild cases of scarlet fever are overlooked because of the mildness of the systemic and throat symptoms, which readily pass for a slight tonsillitis. This mistake would not occur if the body were critically examined by daylight at the time the rash should be present.

Complications. These may be immediate, as suppurative tonsillitis, peritonsillitis or quinsy and extension to the Eustachian tube, middle ear and mastoid; or delayed, such as rheumatic fever and the various systemic infections, which will be discussed more fully.

Suppurative tonsillitis is purely incidental to severe follicular tonsillitis. It consists of one or more abscesses in the parenchyma of the gland and serves to prolong the distress of the patient but only occasionally calls for surgical intervention.

Peritonsillar abscess or quinsy is entirely different and consists of a collection of pus, or an abscess, in the tissues between the tonsil and the enveloping muscular walls, particularly in the upper part of the peritonsillar space.

The diagnosis is usually made evident by the location and nature of the swelling, by the exquisite distress of the patient, especially during efforts to swallow and occasionally by fluctuation to the palpating finger. Quinsy is rare in young children. Usually it occurs in adults who have had repeated attacks of tonsillitis with subsequent sclerotic changes in and about the tonsils.

Treatment of acute tonsillitis. In young children, administration of castor oil or calomel, followed by the indicated remedy, liquid diet and rest in bed until twenty-four or forty-eight hours after the fever has subsided, will prove sufficient to effect a cure. Local treatment is usually impossible and unnecessary.

In adult patients, local treatment in addition to the above measures may be helpful. The application of various substances directly to the tonsils, in an effort to abort the inflammatory process, is recommended, and if used, should be applied with the utmost gentleness. Rough

manipulation in an effort to evacuate the crypts should be emphatically condemned.

The solutions commonly used for application are nitrate of silver, argyrol, iodine and carbolic acid and guaiacol. Various solutions are also used as gargles with more or less benefit, depending upon the patient's ability to gargle properly, such as hydrogen peroxide, liquor antisepticus alkalinus or bicarbonate of soda.

Local measures would probably prove more effective if tonsillitis were purely a local and not a systemic disease. Measures directed to the tonsil alone are somewhat similar to confining one's attention to the consolidation in pneumonia.

Internally the remedies commonly indicated include belladonna, guaiacum, red or yellow iodide of mercury, ignatia, lachesis, aspirin, salicylate of soda. For abscess formation, hepar sulphur. In many cases aspirin has proved most effective in aborting quinsy and relieving pain.

Quinsy is distinctly a condition, demanding surgical treatment.

Isolation of the patient until the throat is clear should be insisted upon in all cases, regardless of the culture findings

Acute septic sore throat is not rightly a tonsillitis, as all the tissues of the pharynx are involved. It is a streptococcic infection usually milk borne, not very contagious, but accompanied frequently with severe systemic complications, particularly in the aged. Treatment is similar to acute tonsillitis. Autogenous vaccines should be made and used promptly.

Vincent's angina is an ulcerative necrosis of the tonsil and buccal tissue, due to the bacillus fusiformis. Its appearance is usually distinctive, but may be confused with diphtheria.

Tuberculosis of the tonsils is commonly secondary to advanced pulmonary tuberculosis. Primary tuberculosis of the tonsils is not infrequent, but almost impossible to recognize without examination of the enucleated tonsil. Clinically it may be suspected in every case in which tubercular cervical adenitis is present. Quite commonly there is found an involvement of the adjacent pulmonary apex with tubercular cervical adenitis, with strong suspicion of the tonsil as the portal of entry for the tubercle bacillus.

The gravity of tonsillar infections is better appreciated when we consider the tonsil in its relation to systemic disease. The tonsil as

the portal of entry for infecting organisms causing rheumatic fever, nephritis, carditis, chorea, osteomyelitis, thyroiditis, hyperthyroidism, tuberculosis and other diseases has long been clinically established.

More recently the chronically diseased tonsil as a focus of infection is receiving due appreciation in its relation to systemic disease. Of course foci may exist elsewhere; for instance, about the teeth, in the accessory sinuses of the nasal cavity, in the prostate, the fallopian tubes, the appendix, or the gall bladder, but the tonsil is one of the commonest and most important foci. Due importance must be given this fact in our diagnosis and therapy, which demands the recognition and ablation of the cause of disease.

Finally the practitioner should be able to decide when the tonsils must be removed. This is no simple matter. Unquestionably many tonsils have been needlessly sacrificed. The fact that we know of no special function of the tonsil is not sufficient reason for denying that it has a distinct province in youthful development. Here is where the co-operation of the experienced laryngologist and the internist will serve the patient best but after all, the responsibility for the decision rightly rests with the internist.

Each case must be decided upon its individual merits. The question to be decided is this: Are these tonsils interfering with the patient's development or health? Many times the remarkable improvement in a child's physical and mental development following a tonsillectomy is wrongly attributed to the operation upon the tonsils, when unquestionably the improvement is due to the concomitant removal of adenoid tissue which has interfered with breathing. In such cases why touch the tonsils at all? The fact that they are enlarged is not sufficient reason. It is natural for them to be in childhood. They should not be removed simply because they are enlarged, unless they interfere with deglutition or speech, or are evidently diseased. We think it bad practice to remove enlarged healthy tonsils simply as insurance against possible future infection, as is so often done.

Should tonsils be removed when diseased? Yes. But this is a question not always easily decided. Large tonsils are not necessarily diseased ones. The small, contracted, submerged tonsil (contracted possibly as the result of repeated inflammation or as the result of a previous tonsillotomy) is, in our experience, more apt to harbor in the depths of its sealed crypts pathogenic bacteria, than the large

open-mouthed tonsil, which readily empties its crypts with every act of swallowing.

Here the investigation of a skilled laryngologist helps one to decide.

It must not be overlooked that tonsils may present the appearance of chronic inflammation, and be the source of considerable distress to the patient, when they are not primarily at fault. For instance, when the mouth is the site of a pyorrhea, the foul products of which are continually passing over the tonsils, keeping them constantly irritated. A purpulent discharge from one of the accessory sinuses, or the middle ear, may have the same effect.

There is much room for debate concerning the advisability of removing tonsils in the presence of acute disease. In an acute rheumatic fever, for instance, preceded by a tonsillitis, as so often occurs, the question arises, will removal of the tonsils promote recovery or avert another attack?

Undoubtedly, where there is a history of repeated attacks of follicular tonsillitis or quinsy, tonsillectomy should be considered but only after intelligent hygienic and dietetic measures, directed towards improving the patient's general condition, have proved futile.

THE TONSIL FROM THE STANDPOINT OF THE UROLOGIST

The causes of pyelitis and pyelonephritis are many and varied, but inasmuch as it does not seem necessary here to specify or outline them, we shall merely state briefly that they may arise from (1) the urinary tract itself, (2) external pressure of diseased organs upon the ureter, (3) chemical irritants locally or internally administered, and (4) any acute infectious disease.

The close connection that may exist between infections in remote portions of the body is becoming more and more generally recognized and it may readily be understood how an attack of tonsillitis may give rise to pyelitis and pyelonephritis. The attack of tonsillitis usually persists for several days, during which a very high temperature is maintained and a profound depression is manifest, the attack being frequently associated with the various phases of rheumatic fever. The liberated toxins arising from this condition pass, of course, through the kidneys. While one attack of tonsillitis may do but little

damage to these organs, several attacks are likely to produce toxins in too great abundance for the kidneys to excrete. When it is considered that recurrent attacks of tonsillitis are very frequent, some patients having several each year, the seriousness of this factor in the production of kidney lesions may be appreciated. As the result of the destructive changes in the kidney thus produced, either pyelitis or pyelonephritis may ensue, causing changes in the ureter as well. When the condition is unrecognized and untreated, there occur obstructive changes in the ureter, bringing about a back-telling effect upon the pelvis with a resultant infection.

The pathological picture usually calls for changes in the appearance of the ureteral meati, since both ureters and pelves are usually infected. Stenosis of the ureter, varying degrees of hydro-nephrosis and resulting infection are also found. Bacteriuria, in which the colon bacillus and the staphylococcus predominate, likewise exists.

Although, in our experience, we have found pyelitis of tonsillar origin to be infrequent, this may be due to the fact that the attention of the profession has been called but little to the probable relationship existing between the two conditions. A few frank cases have occurred in our practice and we have observed some others in Hunner's cystoscopic clinic. Only the other day a little girl, six years of age, with pyelitis, was seen by us in that clinic. She was then showing some slight improvement in the condition, following dilatation of the strictures and irrigation of the pelves of the kidney, but inasmuch as no attributable cause could be discovered, inquiry was made into the possibility of its lying in the existence of a sore throat. Examination showed enormous hypertrophied tonsils, together with adenoids.

Since pyelitis cannot be cured without discovering its cause, it is well, in cases in which other causes can be excluded as exciting factors, to consider tonsillar attacks as probable etiological factors, at the same time carefully inquiring into the condition of the nasal accessory cavities. We have no doubt that if the urologist were more often to consult the laryngologist, he would sometimes find a cause for his unexplained cases of kidney infection.

The treatment of this type of pyelitis may be summed up in the one word, tonsillectomy. It is useless to hope for a cure without this procedure. Hunner ("The Treatment of Pyelitis," Surgery, Gynecology and Obstetrics, October 12, 1915) calls attention to a

series of cases of pyelitis of tonsillar origin, some of which were cured by tonsillectomy. It is worthy of note that after the removal of the diseased tonsils, very little local treatment of either the ureter or the pelvis is necessary in order to clear up the kidney condition. We have had the privilege of observing a number of these cases with Dr. Hunner in his clinic, in addition to our own few personal cases. Among the latter it may be of interest to report two briefly:

1. Mrs. K., aged forty-two years, married, a nullipara and a patient in the Women's Homoeopathic Hospital, called at our Urological Clinic, complaining of pain and tenderness over the right kidney, associated with attacks of frequency of micturition, which was both diurnal and nocturnal, attended with pain. These attacks had come on over a period of eighteen years. A catheterized common specimen showed pus cells in the urine. The right ureteral orifice was congested. A number 5 renal catheter passed a stricture five centimeters above the vesical outlet, withdrawing 21 c. c. of residual urine from the dilated pelvis. This showed pus cells and casts. The right kidney was moderately low, the phenosulphonephthalein functional test on the right side, made intravenously, appeared in eight minutes; that on the left, in four minutes. Radiography and bilateral pyelo-uterography failed to show any foreign body. On further investigation the patient informed us that she had had attacks of tonsillitis every winter since early adult life. In fact, as she stated, she had had "all kinds of throat trouble with the exception of diphtheria." Here is a clear case of a continuous strain upon the kidneys, producing a lowered resistance and an inability to excrete toxins, primary focus of which was not in the kidneys, but in the tonsils. She was referred to the throat department, where this was confirmed.

2. J. F., a private patient, a pugilist twenty years of age, was referred to us for urinary frequency and distress following a short but severe boxing bout three months previous. During the fight he had received several heavy blows over the region of the right kidney and a foul blow over the lower right side of the abdomen. Ever since then pain had been experienced at McBurney's point—at times, acute. He had never had Neisser infection. The urine showed many pus cells. The preponderance of the symptoms pointing to the appendix caused me to remove it, thinking that the pyelitis might be due to appendicitis. Dr. Charles Harvey assisted at the operation, which

was done in December, 1913, at the West Philadelphia Homoeopathic Hospital. The appendix, however, was found to be normal. Following the operation the urinary distress appeared from time to time. Cystoscopy and catheterization of the ureters, done about six months after the operation, revealed a stricture of the right ureteral orifice four centimeters from its vesical end, admitting a No. 4 ureteral catheter. Ten cubic centimeters of urine was withdrawn from the right pelvis. It contained pus cells. The left side was normal. The patient had a very dull mentality, and complained frequently of frontal headaches and sore throat. Examination showed an enormous enlargement of both tonsils, which were cryptic and filled with exudate. We referred him to Dr. Palen, who advised tonsillectomy. I heard from this patient about a month ago. He is quite well and free from urinary distress and since the tonsil operation he has had a very successful and eventful career in the ring.

THE RELATION OF THE TONSIL TO THE THYROID

Distinct from the usual types of thyroid diseases, spoken of as "goitre," and clinically studied as simple hypertrophy, colloid, grumeus, cystic goitre and hyperthyroidism, we recognize an enlargement of the thyroid body akin to simple goitre in its histological make-up, but etiologically induced by direct infection and unquestionably, the cellular increase in this form of thyroid enlargement is, in its incipiency at least, of the type of an inflammatory infiltration, rather than hypertrophy and hyperplasia.

The onset of this thyroid swelling is acute and clinically identical to that in lymphatic nodes in the cervical chains accompanying acute infections in the upper respiratory passages.

The swelling of the thyroid, under such infections, is symmetric, affecting the lateral and median lobes alike, resulting in more or less uniform tumor, which is not the form of enlargement in the majority of true goitrous growth.

For a short time these swellings manifest the usual signs of inflammation, in a mild form, however, soon becoming a cold, painless swelling; in other words, the period of inflammatory swelling is short and clinically we observe that the growth now behaves like a true primary hypertrophy with the usual attending signs of pressure and

hyperthyroidism.

With this as a preamble, we shall now comment briefly upon our observations in one hundred and eighty-seven cases, out of a total series of two thousand two hundred and thirty-six cases of thyroid disease in our own experience, in which, the history, clinical course and therapeutic results justify the theory that the thyroid disease followed upon either a direct bacterial infection of naso-pharyngeal origin, or from toxic irritation in nearby foci.

Supported by our knowledge of the pharyngo-lingual origin of the embryonic thyroid, from the fore gut ventrally in the median line to the branchial arches and furthermore, our knowledge of the persistency of the original openings, the ductus thyro glossus or foramen caecum in its journey downward in front and also in the lateral aspect of the trachea, to a permanent position just below the level of the cricoid cartilage, forms the lateral and median lobes. Thus the anatomical continuity of structure which has been proven to exist between the adenoid tissue and the faucial tonsil and the thyroid body, justify the conclusion that tonsillar infections can and do lead to thyroid enlargement through direct infection or toxic irritation, as plausible, as we recognize the influence of faucial infections on lymphatic glands, in accessory sinuses and mastoid disease, whether by contiguity of structure or by metastasis.

Infection from the tonsil and peritonsillar region can be carried to the thyroid over three main routes: (1) By extension through the anatomical passages; (2) by the blood stream, and (3) by the lymphatics.

In much the same manner in which a finer study of the accessory sinuses has shown that adenoid and tonsillar infections are primary foci in these diseases, so too, have clinical and bacteriological research demonstrated that these focal infections, even though latent or remote, are responsible for thyroid growths, as they are known and proven to be etiologic factors in many of the so-called "idiopathic," "systemic," "constitutional dyscrasia" and the like; such as rheumatism, chronic arthritis, etc.

From a bacteriological standpoint we must, at once, bring forth the fact that in all of our studies of thyroid enlargement in association with tonsillar and adenoid affections, we have never been able to isolate and prove the bacterial agent in the thyroid tissue, which

may be explained by either a destructible chemical action of thyroid secretion upon bacteria, or that in reality no germ invasion of the thyroid occurs, but only a toxic irritation or chemical stimulation to cellular increase and subsequent alterations in the character of the secretion.

Furthermore, as the most common infectious agents about the teeth and tonsils are pus cocci, in the absence of the usual tissue changes brought about by coccic virulence (abscess, necrosis), we again are forced to conclude that either the thyroid reaction destroys germ life, or that the neighboring toxic reaction stimulates thyroid growth, altered secretion and disturbance of metabolism.

In our series of one hundred and eighty seven cases in connection with tonsillar and pharyngeal disease, in which thyroid enlargement and goitrous symptoms appeared suddenly and increased acutely, nearly eighty per cent. of these cases were observed in young subjects, between 2 and 20 years of age, when adenoid and tonsillar affections are most common and when true goitrous thyroid is proportionately less prevalent. In none of our cases of this series did the early inflammatory stage or the subsequent changes in the swollen thyroid, ever lead to suppurative breaking down; but we did observe in two of the one hundred and eighty-seven cases that the hypertrophy was soon followed by progressive atrophy, hypo-thyroidism and myxoedema.

In support of the germicidal power of thyroid tissue-juice can be further offered the fact that, in thyroid surgery, wound infections do not encroach upon the remaining portion of thyroid structure, notwithstanding the close contact with a septic wound.

The behavior of goitrous enlargement in association with distinct tonsillar or adenoidal conditions is of interest, both therapeutically and prognostically, because in reality with the proper treatment of the tonsil and adenoids, the goitre tends to spontaneous resolution or responds to direct treatment with surprising rapidity. The history of one of the most striking cases in our series will best illustrate this point.

Mrs. A. S. T., age 32. During convalescence from a severe attack of follicular tonsillitis, she noticed a sudden enlargement of her neck in the median line. The swelling increased, became hard, painful and the skin over the thyroid lobes appeared purplish, with slight

elevation in temperature. We also found a certain degree of exophthalmos, tachycardia and tremor. The patient had nausea and vomiting, some difficulty in swallowing and hoarseness. The tachycardia increased and a laryngitis with abundant secretion, which was difficult to clear up, distressed the patient for several days. On the fifth day all signs of acute swelling diminished and continued to do so until the ninth day, when we noticed that the enlargement of the thyroid was more distinctly lobular, painless and the skin of natural appearance.

Our treatment was strict—rest in bed, without pillows; icebag to neck, simple diet, avoidance of all excitement. The tonsils which showed follicular patches were treated with antiseptic gargles. Internally we administered digitalis, cacodylate of soda, lycopus, according to indications. In four weeks the thyroid enlargement had reduced one-half, while the tachycardia, tremor and exophthalmos were scarcely evident. At the end of three months the patient was well and showed no signs of thyroid disease.

FOCAL INFECTION

In recent years the importance of foci of infection as the causative factors in the production of many formerly imperfectly understood diseased conditions, has come strongly to the front. This has been brought about largely through the untiring work of many excellent clinicians and laboratory investigators who have devoted their time to the study of the causative factor of acute rheumatic fever. On account of the importance of systemic infection and especially, in this place, of the importance of the tonsil as a focus of systemic infection, it is fitting that some résumé should be given and considerable attention paid, to the excellent work of those investigators who have rendered so valuable service to the study of medicine and who, from the standpoint of the laryngologist, have placed oral infections in so prominent a place as they now occupy.

The relation of tonsillar infections to acute rheumatic conditions was recognized many years ago especially by French writers and we find in the literature many references to the association of such conditions as chorea, pericarditis, endocarditis and others to arthritis.

Trosseau, in *Clinical Medicine*, Volume 11, page 466, calls atten-

tion to the relation of the tonsils to rheumatic conditions.

Fowler, in the *Lancet,* December 11, 1880, writes as follows: "* * * I have lately kept notes in all cases of acute and subacute rheumatism, and find that in a very large proportion the attack has been preceded, at an interval varying from a few days to a month, by some throat affection. It may be a simple catarrh, but in many cases it takes the form of an acute inflammation of the tonsils. Without at present being able to give the exact percentage of cases presenting this premonitory symptom, I think I should not be exaggerating if I were to put it at eighty per cent. * * * In some cases the throat and joints are affected simultaneously and I have also met with cases of relapse of rheumatism where the primary attack and the relapse have both been preceded by throat symptoms. * * * Nevertheless, I believe that not infrequently it is an early manifestation of the rheumatic diathesis, and that by so regarding it we may prevent the further development of that tendency. This sympathy is not limited to rheumatism, for it is a matter of common experience for scarlet fever, measles, diseases which are ushered in by affections of the throat to be followed by the so-called "rheumatic" affections of the joints; by acute arthritis, and even occasionally pyaemia."

In the *British Medical Journal,* February, 1888, the report of the Collective Investigative Committee shows that tonsillitis was associated with rheumatism in one hundred and fifty-eight out of six hundred and fifty-five cases in addition to twenty cases of sore throat, the exact nature of which was not described.

W. B. Cheadle, in a series of lectures delivered before the Harveian Society in London in 1889, upon the "Various Manifestations of the Rheumatic States as Exemplified in Children and Early Adult Life," discusses the relation of endocarditis, pericarditis, pleurisy, tonsillitis, exudative erythema, chorea, etc., with arthritis and says, "yet the rheumatic poison is the most common exciting cause of arthritis and so with other members of the rheumatic series * * * "It appears then that the rheumatic virus (whatever its exact nature and by whatever physiological machinery it acts) which produces the articular inflammation, produces in like manner inflammation of the fibrous tissue, of the pericardium, endocardium and pleura and that of fascia and tendon." * * * It affects, moreover, mucous membranes and skin and disturbs nervous centers." Again he says: "The

claim of tonsillitis to be ranked as one of the rheumatic series is, I think, well established. Tonsillitis is a common disorder, and often arises independently, but it occurs so frequently in direct and immediate association with articular rheumatism that some pathological connection cannot be doubted."

As we read these reports, and especially, as we read the most interesting lectures by Cheadle, we cannot but be impressed with his foresight in recognizing one agent as the causative factor in the various conditions described by him. In other words, his recognition of the fact that the agent which caused arthritis was undoubtedly the same agent which was producing endocarditis, pericarditis, myocarditis, chorea, etc.

Passing from these excellent lectures and deductions drawn by Cheadle, how wonderfully true his deductions seem in view of the work of such investigators as Poynton and Payne, Billings, Davis, Mellon and others, and especially the classical work of Rosenow. Although the work of Poynton and Payne, who described a diplococcus as the cause of rheumatism, was not entirely conclusive evidence, still it is through their work that more recent investigators have been able to reach very definite results. The failure of many investigators to reach the conclusions of Poynton and Payne is shown by Rosenow and on account of the importance of his writings we quote from him freely:

"The contentions of Poynton and Payne, Beatty and other workers that rheumatism is due to a streptococcus with peculiar properties have not been generally accepted. The chief reason for this is due to the fact that most investigators have failed to find the organism which they have described; no one heretofore has found the organism in a considerable number of consecutive cases of typical non-fatal cases of rheumatic fever. * * *

"I conceived the idea that the reason for the peculiar localization of the organism in rheumatism about the joints, endocardium, organs relatively avascular and hence of a correspondingly low oxygen pressure and the large negative results of cultures might be due, in part, to an extreme sensitivity of this organism to oxygen." Then describing his method of culture, he says: "In this way I have been able to isolate the organism from the joint exudate in fourteen out of sixteen cases of acute rheumatism. The two cases in which the cul-

tures were negative the patients were convalescing at the time the cultures were made. By considering this question of oxygen relation I have been able to isolate the organism from the blood in four out of seven cases. * * * Three types of organisms have been obtained in these cases. One type of organism corresponds to that found by Poynton and Payne, and might be named the '*micrococcus rheumaticus*.' Another type corresponds to the description of Beatty and might be quite properly designated as '*diplococcus rheumaticus*,' the third group, which forms long chains, may be designated as '*streptococcus rheumaticus*.'

* * * "The finding of the *streptococcus viridans* especially as isolated from cases of chronic infectious endocarditis of the endocardium of animals and of the '*haemolytic streptococcus* of the joints, is now quite well established. This is so marked in certain strains that I have been able to produce endocarditis due to the former and arthritis due to the latter in the same animal by injecting mixed cultures of these in pure form, and mass cultures from the tonsils. After having done this I felt that rheumatism might be due to a mixed infection of these organisms, the former producing the endocarditis and the latter an arthritis, or otherwise it is due to an organism which partakes of the nature of both of these. * * * When the organisms from articular rheumatism are injected as isolated, they produce, commonly, endocarditis, arthritis and pericarditis in the same animal, both the endocarditis and the arthritis having the essential characteristics as found in man. The lesions on the heart valves consist of sub-endothelial hemorrhagic and later whitish nodules, which remain small and then tend to become sclerotic. The arthritis is multiple, never suppurative, the number of organisms obtainable are few or none; and it promptly heals. The endocarditis from the strains from rheumatism, just as has been found to be the case in *streptococcus viridans endocarditis*, is embolic in origin. This is true of the auriculo ventricular as of the semilunar valves. In the latter hemorrhages occur at the base of the cusps and vegetations have been found to occur there. The valves of the hearts of children are known to be less resistant to infection than valves of adults. This lack of resistance of the endocardium of the young probably means avascularization of the valves, and nothing more. The increased susceptibility of a previously infected valve, but which was healed, is probably due to

the same cause.

"These experiments prove, it seems to me, why *streptococcus viridans endocarditis* in man runs a malignant course so often, and why the endocarditis of rheumatism is commonly a simple endocarditis, which heals, producing sclerosis and deformity. A number of years ago I pointed out, while the streptococcus viridans apparently usually causes malignant endocarditis, it may also be the cause of simple endocarditis, which runs a malignant course and heals—in such cases for example, as the endocarditis following acute follicular (*hemolytic streptococcus*) tonsillitis without joint involvement in young individuals. There are many points in favor of this view—healing and healed endocarditis have been found in rabbits, particularly young rabbits, following injections of *streptococcus viridans*. Owing to the kindness of Dr. Moody I have been able to isolate *streptococcus viridans* from the depths of a beginning endocarditis in a child which died from a hemolytic streptococcic sinus thrombosis following tonsillitis and otitis. Furthermore, practically every case of chronic infectious endocarditis due to *streptococcus viridans* is engrafted on top of the previously scarred valve. The simple endocarditis due to the streptococcus viridans in young healthy valves results because of vascularization and repair is good; whereas in a previously scarred valve, when reinfected by this organism, vascularization and repair are reduced to a minimum and vegetations grow large, ulcerate and produce a malignant form of endocarditis.

"A number of authors have described epidemics of rheumatism in which the skeletal muscles are commonly involved and in which myocarditis was a striking feature in many cases. In this series the diplococcus type of organism has been isolated from the joints in a number of cases which showed definite involvement of the muscles, and from an excised lesion of the muscle from one case. These strains when injected into animals, instead of producing only arthritis and endocarditis, showed a marked affinity for the skeletal muscles and for the myocardium, at the same time involving the joints and endocardium to a certain extent. The lesions in the muscles appear as small linear whitish streaks, which have never suppurated and which showed degeneration of the muscle fibre, together with leucocytic infiltration. The flat muscles are most commonly involved—the flat muscles of the abdomen, intercostals, and the muscles of the neck,

shoulders and vertebrae, while the muscles of the extremities are involved chiefly where they merge into tendons. The involuntary muscles have escaped. After one or more animal passages the affinity for the muscles of these strains, just as with other strains of streptococci which have been made to resemble these, disappears entirely.

"Following the intravenous injection of this organism from rheumatism, hemorrhagic and ulcerative appendicitis is quite common.

"The question of rheumatic iritis has also come up. Many men doubt the existence of true rheumatic iritis, and, so far as I can find, no one has demonstrated experimentally whether the iritis that is considered rheumatic is toxic or infectious in nature. Inflammation of the conjunctiva, iris and limbus has followed injection of the organisms from rheumatism repeatedly, and I have isolated the organism from these lesions in both rabbits and dogs, suggesting that there is a true rheumatic iritis in man and that it is probably infectious and not toxic in nature.

"The place of entrance of this organism is often difficult to determine in certain cases. The association of tonsillitis when the attack comes on is nearly always mild, while in chronic infectious endocarditis there is often no apparent tonsillitis, * * *

"Organisms closely related to the *streptococcus viridans* present in the intestinal tract. In two cases of rheumatism I have succeeded in isolating the causative organism from the stools.

"Wherever the focus of infection may be, judging from the results of my studies in transmutation, the focus must be looked upon in the future, not only as the place of introduction of the organisms, but as a place where they acquire the various affinities necessary to infect. Judging largely from the work of Billings and Davis, it is safe to say that the focus is most commonly found in the oral cavity, and here the order of frequency is probably the tonsil, pyorrhoea and blind abscesses about the teeth." * * *

In the discussion of this paper Dr. Green, of St. Paul, asked Dr. Rosenow to say something concerning the tonsillar origin of rheumatism and the time of infection following the tonsillitis. In answer Dr. Rosenow stated: * * * "the focus of infection which is looked upon now only as the place of entrance of bacteria is also the place where the various streptococci are so modified as to give them their wide range of affinities. * * *" If rheumatic fever

occurs at all in association with *hemolytic streptococcus,* tonsillitis appears during convalescence, often ten days to one month after the acute symptoms have subsided. * * * the inflammation of the tonsils at the time of the attack is usually mild and often not complained of by the patient."

Billings in his article on Focal Infection (*Journal A. M. A.*, September 12, 1914) says: "The focus of infection may be located anywhere in the body and usually in the head, in the form of alveolar abscess, deep tonsillar or peritonsillar and chronic sinusitis." * * * In this article he cites a series of cases proving focal infection. He further says: "The removal of the focus of infection is demanded as a fundamental principle, in systemic disease, especially of the chronic type."

From the foregoing it can be seen how beautifully has been proven the clinical observations of Cheadle as to there being one causative agent for the various conditions enumerated by him. Furthermore, it can be seen how beautifully the theory of focal infection is brought out and of especial interest to us, how strongly the tonsil stands out as a most important point of focal infection. The work cited also emphasizes the fact that while the tonsil may be found diseased in cases of systemic infection, it may not be the original focus or causative focus, thus emphasizing the necessity, as stated in a following paper upon the tonsil operation, for a most careful study of each individual case by the internist and laryngologist. Furthermore, Rosenow's proving of the transmutation of bacteria and his demonstration of the fact that bacteria entering the tonsil may be changed into entirely different strains after entrance, explains perhaps, as he himself points out, the reason for failure of many so-called autogenous vaccines in the treatment of systemic disease.

TREATMENT AND MATERIA MEDICA

The treatment of chronic tonsillar conditions may be divided into three heads, namely, hygienic, medicinal and surgical. It is the province of this particular article to deal especially with the internal medicinal treatment, touching briefly upon some hygienic measures applicable in various tonsillar disturbances. In the way of local treatment, cleanliness is the first thing to be thought of, and as most ton-

sillar infections are due to disturbances within the crypts, an effort should be made to wash these out and render them, as nearly as possible, aseptic. The washing process can be best accomplished by the aid of an atomizer having a curved metal tip which may be inserted into the opening of the crypt and then with considerable force from the compressed air tank, the alkaline spray is carried to the bottom of each enlarged crypt. Following this washing process, some antiseptic and astringent stimulating treatment should be applied to the areas, reaching down into the crypts as far as possible. Such solutions as nitrate of silver, preparations of iodine, glycerine and tannic acid, argyrol, and even alcohol may be used. For home treatment the patient should be instructed to gargle with hot saline and in diphtheroid conditions a gargle of hot fifteen per cent. alcohol gives excellent results.

A culture should be taken in all cases of acute tonsillitis, and the germ isolated at the earliest possible moment. Dr. R. R. Mellon, of the University of Michigan, has recently described a method for the early diagnosis of septic sore throat and told us how to isolate the streptococcus in pure culture at an early date. He has also given us some excellent reports of the treatment of these conditions with autogenous vaccines made from these cultures isolated by his methods. There can be no doubt as to the value of the autogenous vaccine in that variety of sore throat resulting from the drinking of milk from cows affected with suppurative mammitis and in fact any epidemic sore throat in which the streptococcus, in one of its numerous forms, is the offending germ. A dose of mixed stock vaccine may be given at the first visit if the case seems to demand it, but an autogenous vaccine should be made at the earliest possible moment and administered. This treatment we believe applies particularly to the so-called epidemic sore throats that occur now and then in various communities.

We believe, however, that in the majority of cases of acute tonsillitis and acute sore throat, prompt action is secured by the careful administration of a properly selected remedy. A selection of this remedy, however, must contemplate the symptom complex of the patient and not the local conditions alone. We believe we are too often inclined to prescribe on symptoms found within the throat or within a particular locality, without giving due consideration to the general symptoms manifested by the patient. One of the first things

to be thought of is the condition of the alimentary tract, and therefore attention should first be directed to seeing that the bowels are open and that there is no intestinal stasis.

Light nourishing diet should follow the use of cathartics or evacuation of the bowels by enema and the patient should be required to rest either in bed or within doors for a brief time at least.

Following an attack of tonsillitis, either acute follicular or suppurative, a careful and painstaking examination of the patient should be made and every effort put forth to determine the cause of the attack and to remove it if possible. If it is found that the crypts of the tonsils are enlarged and tend to harbor decomposing secretions, there can be little doubt that, with the present day method of successful removal of the tonsil, tonsillectomy should be performed. However, there are many patients who object to having the tonsils removed, and in these cases we must find some other means to at least render them less liable to further attacks. We believe that careful hygiene of the tonsil under such circumstances will produce very satisfying results in many cases. We must be very thorough, however, in the matter of washing out the crypts and thoroughly disinfecting them. As has been said before, this is not only an easy matter, but by careful, painstaking efforts we can in many cases give decided relief. We must not, however, overlook the importance of surgical interference and see that our patients are carefully informed as to the advisability of such interference in all cases where a tendency to recurrent tonsillitis is manifest. It has been sufficiently demonstrated that the general welfare of the patient is greatly conserved by the complete enucleation of the diseased tonsil and there should no longer be any hesitancy in performing the operation in all such cases. Recently a few men have been advocating the injection of soluble iodine into the gland in cases of chronic hypertrophy, claiming rapid reduction of size and disappearance of all pathological symptoms. This treatment, however, is as yet too young to say what may be expected from it. It is probably worth trying in such cases as may refuse operation and which do not yield to hygienic and medicinal measures.

The following are some of the most important remedies with a few of their indications. It is not intended that this should be a complete list or that the symptoms set down are all that might be mentioned. As said before, the general condition of the patient should

be taken into account in selecting the remedy, the condition of his bowels, his alimentary tract in general, and in fact his symptom complex from head to foot should be gone over.

Aconite. Redness of soft palate, tonsils and uvula, posterior nares. Burning, sense of constriction, with scratching causing hawking and spitting. Acute inflammation of various portions of the throat, with swelling, dryness and sticking pain after exposure to cold winds. Indicated before stage of infiltration, exudation or ulceration.

Aesculus hippocastanum. A valuable remedy for follicular inflammation of the posterior wall of the pharynx, with sense of constriction, dryness and raw feeling; difficult swallowing, pain in tonsils and fauces. (Compare phytolacca.)

Ailanthus. Parotid and thyroid glands enlarged and sore. Spreading ulcers, feeling as if nitrate of silver had been applied. Inflammation of fauces and tonsils with spots of incipient ulceration. Thick oedematous and dry choky feeling. Astringent feeling. Soreness on swallowing, extending to ears. Diphtheritic scarlatina with ichorous discharge from the nose.

Apis mellifica. Throat swollen, difficulty in breathing and on swallowing. Parts red, dry and shining. Rawness with inclination to hawk, with viscid saliva. Feels as if he must raise something, which sensation is generally due to oedema, choking sensation and feeling of constriction and sense of a foreign body in throat. Deep seated stinging and itching. Severe inflammation of throat with general stupor and prostration, even in diphtheria apis is a valuable remedy. Swelling, oedema, stinging pains, sense of constriction, difficult swallowing, absence of thirst, deep red appearance, are leading symptoms

Argentum nitricum. Redness of velum palati, posterior nares and isthmus. Uvula and fauces dark red. Mucus in posterior nares forming lumps causing much hawking. Sensation of splinter in throat when swallowing. Cauterized feeling of uvula. Sensation of burning and dryness. Tickling causing cough. Styptic sensation. Acute and chronic sore throat with much mucus. Sticking sensation in throat. (Nit. acid). Catarrh of smokers, with sensation of hair causing cough. Better again by smoking.

Arum triphyllum. Swelling of the left sub-maxillary glands. (Bar. carb. merc. bin., Internal swelling in region of larynx, worse on right side. Tenacious mucus compelling cough and hawking, con-

stant scratching with *burning* and desire to swallow. Soreness at 5:00 a. m. and and 4:00 p. m. Swollen feeling in soft palate in morning when swallowing. Stitches in throat: Throat painful to pressure, swallowing difficult. Amelioration after breakfast continuing until after dinner. "Clergyman's sore throat." Violent coryza. Hoarseness.

Baptisia. Redness of tonsils and soft palate. Frequent inclination to swallow which causes pain a root of tongue (Phyto). Throat feels swollen or full with oppressed respiration, and sharp pains in chest on deep inspiration. Rawness with much viscid mucus. Constriction causing frequent efforts to swallow. (Apis. lyc.) Dryness extending to nares with roughness and astrigent sensation, then increased secretion, especially from larynx. Diphtheria, the patient comatose or delirious able to swallow only liquids, face dark red and horrible odor from mouth. Contraction of esophagus causing great difficulty in getting food into stomach. Profound depression.

Baryta carbonica. Sub-maxillary glands swollen (Calc., Merc. bin.). Takes cold easily and has inflammation of tonsils in consequence. Tonsils may suppurate (Merc. cor.) and prevent opening of jaws. Swelling of left tonsil. Throat worse during smpty swallowing. Constriction worse in afternoon. Sensation as of a plug in larynx. Choking attacks after meals with sensation as if thyroid gland were pressed inward impeding respiration. Constriction during dinner with arrest of breathing so that patient must open clothing around throat. A valuable remedy in quinsy—seems to remove the predisposition. Valuable in suppurating tonsils which occur following every cold. Indicated when tonsils are inflamed with swollen veins. The baryta patient usually has habitual sweating of feet. Tonsillitis accompanying malnutrition of children, scrofulous glandular indurations.

Baryta muriatica. Chronic hypertrophy of tonsils. Loss of power, paresis of pharynx and Eustachian tube with clacking sounds on swallowing or sneezing.

Belladonna. Pain in the region of tonsils. Difficult to swallow water, returns through the nose. Indicated in scarlatina sore throat with redness and dryness of fauces. Adapted to earlier stages of inflammatory diseases of throat, which are characterized by dryness and a tendency to spasmodic constriction of the pharyngeal muscles. A high fever and often delirium accompanies the throat symptoms.

Calc. carb. Swelling of sub-maxillary glands (Baryta c.) as large as hen's eggs and hard, with painful tension when chewing and sticking when touched. Swelling of tonsils with elongation of uvula and sense of constriction in throat when swallowing. White yellow ulcers on R. tonsil. Mucus tastes like iron. Much hawking in the mornings. Sensation as if something had stuck in throat as in globus hystericus. Patient takes cold easily, accompanied by clear watery coryza. Children who are fat and fair. Chronic eczema is often an accompanying symptom, as is also corneal ulcers. Closure of lachrymal ducts. Sweaty and cold feet, etc.

Cantharis. Swelling of tonsils with inflammation and covering of plastic lymph. Aphthous ulcer on side of tonsils. General inflammation of throat, which feels on fire. (Ars.) Diphtheritic inflammation of throat with constriction amounting almost to suffocative dyspnoea.

Capsicum. Spasmodic contraction of throat. Sore throat of smokers and drinkers, with inflammation, burning and relaxed uvula. Diphtheria with gangrenous sloughs extending to roof of mouth with much burning.

Carbolic acid. Fauces red and covered with much mucus. Exudation. In diphtheria especially with tendency to involve nose and inside of mouth, extremely fetid breath, regurgitation on swallowing liquids. Urine albuminous, face dusky red, white about the mouth and nose; rapid sinking of vital forces.

Hepar-sulphur. Sticking as from a splinter on swallowing—extending toward ear (Nit. ac.). Tonsillitis in suppurative stage. (Indicated after Bell. and Baryta.) These three remedies may follow in succession. Belladonna in beginning, baryta after the belladonna, dryness and fever have subsided, then if suppuration threatens, hepar, the indications for which are fetid odor of saliva, sharp splinter-like pains on swallowing, and great sensitiveness to air or even chilliness.

Kali. bich. On right side of the root of uvula, an excavated sore, with reddish areola, containing yellow, tenacious matter. Ulcers on tonsils, throat, surface of which is covered with an ashy slough and the surrounding mucous membrane dark, livid and swollen. Uvula and tonsils red, swollen and painful, then ulcerated. Hawking of much tenacious mucus in morning. Plugs in throat and posterior nares. Mucus is ropy. Cheesy exudation in tonsils. Diphtheritic ulceration of tonsils and pharynx—very tenacious exudate. A leading remedy

in diphtheria.

Lachesis. Sensitiveness of throat to external pressure with suffocative feeling, even to touch of clothing. Rawness and dryness of throat. Throbbing in glands. Ulceration of tonsils. Swelling of submaxillary and salivary glands. Extreme sensitiveness is a keynote symptom for Lach. The slightest touch aggravates. Feeling of suffocation. *Must get clothing around neck loosened quickly.* Great difficulty in swallowing. Liquids regurgitate through nose. Left side of throat chiefly affected, or the trouble may have extended from left to right. Lachesis is especially indicated in diphtheritic destructive process and in gangrenous conditions. The appearance of throat is dark purple—not bright red, and oedematous like Apis.

Lycopodium. Sensitiveness of sub-maxillary glands. (Iod. merc.) Ulceration of tonsils, like chancres. Suppuration of glands between the arches of the palate. Tonsils covered with milky white film after taking cold. Tonsillitis especially on right side assuming a diphtheritic character. Aggravation about 4 p. m. accompanied by fan-like motion of alae nasi, and stoppage of nostrils. Diphtheria of right side accompanied with albuminuria and oedema of face, hands and feet.

Merc. corr. Throat so inflamed that speaking and swallowing are difficult. Ulceration of throat and soft palate, uvula, velum palati. Dark redness of pillars and tonsillar folds. On edges of pillars are soft gray excrescences. Grayish ulcers on tonsils and gums and inside of cheeks. Breath offensive. Burning pain. Inflammation of uvula and arch of palate with much swelling. Sometimes useful in diphtheria.

Merc. cynatus. Swelling of salivary glands. White opalescent coat resembling superficial mucous patches of syphilis on pillars of velum, palate and tonsils. Redness of fauces and pharynx. Necrotic destruction of soft parts of palate and fauces. A valuable remedy for the form of diphtheria characterized by the mercurial symptom and aggravation with extreme prostration. The disease invades the nostrils and there is threatened collapse with very small rapid or intermittent pulse. It follows apis mell. (Used by many allopaths in a 1-1000 solution for diphtheria with "splendid results.")

Merc. iod. ruber. The inflammation of the throat is worse or confined to the left side. Otherwise the symptoms are similar to proto iodide. Usually the same yellow coated tongue, though in some cases

the tongue is clean. Painful swelling of tonsils and sub-maxillary glands. Scalded feeling in throat. Almost constant desire to make an empty deglutition from salivation and fullness of throat.

Mezerium. Syphilitic sore throat with burning and dryness extending down the oesophagus and inflammation extending into the larynx with much hoarseness. Swelling of gland below left ear on margin of ramus of jaw. Much secretion of mucus, making singing difficult. Cannot utter pure tone. Inflammation of pharynx with sticking when swallowing. Burning in pharynx, oesophagus and fauces. An especially valuable remedy in ulcerative sore throat.

Nitric acid. Sore throat with pain as from splinters on swallowing, with much salivation. Syphilitic ulceration of mouth and throat. Enlargement of parotid glands. Diphtheritic sore throat with high fever, nausea and vomiting; deposit on tonsils and posterior wall of pharynx, feeling as if a foreign substance on swallowing, with cutting pain. Diphtheria with excoriating discharge from the nose and corners of mouth. Rheumatic soreness of palate muscles following influenza. Useful after abuse of mercury.

Phytolacca. Tonsils and palate dark purple. Tonsils swollen and red. Eruption in fauces. Enlarged tonsils especially indicated when color is bluish. Feeling in pharynx of scraping and rawness, with at times dryness. Sore throat in general with or without ulceration. Soreness and stiffness of muscles of neck accompany other symptoms associated with backache, headache and vertigo. Right side more often affected.

Silicea. Sub-maxillary glands, swelling, painful on touch, with drawing pain in them and sore throat on swallowing as from internal swelling. Discharge recommenced in an old abscess that had discharged years before. Hawking balls of greenish-yellow offensive mucus, salty taste. Tonsillitis with threatened suppuration, or after suppuration, when it does not show inclination to heal. Silicea is a valuable remedy in chronic tonsillitis where there is an exudate of cheesy foul-smelling material.

TONSIL SURGERY AND VOICE FUNCTION

The great confusion that now prevails regarding this question results from several factors: (1) Articles upon the subject are usually

written to prove or to disprove some pet notion of the particular writer and generally with no clear distinction between established fact and airy theory. (2) Medical writers, as a rule, think only in terms of localized anatomy and physiology, with no adequate conception of voice production as an expression of the entire physical and psychical personality. (3) So much of the damage admittedly due to unwise, imperfect or bungling surgery has been charged against surgery *per se* that conclusions based upon reported results in such cases are usually of no value.

There is great need that we lay aside fancy theories, cease our combative arguments and try to fix in our minds certain simple facts upon which all are agreed. By doing this we can render the whole subject comparatively clear and put aside most of the stock arguments as irrelevant.

Let us begin by stating the seemingly obvious fact that the healthy tonsil with a physiological life history is not a hindrance to voice function and the question of its possible function or of its surgical treatment is not under consideration.

The abnormal tonsil is the one to which we must give attention and it is almost equally obvious that such a tonsil is a hindrance to voice function, somewhat in proportion to the degree and character of its abnormality. But it is not merely in obvious ways that diseased tonsils are inimical to good voice quality. The effect of mechanical obstruction is most apparent. It is easy, too, to understand that localized inflammations can impair the action of the delicate muscles concerned in vocalization and that permanent damage to laryngeal structures can result from tonsillar inflammation.

Less apparent but perhaps equally important to voice quality is the effect of chronic tonsillar disease upon the general vitality of the individual. So constantly do we use our speech as a medium of exchange for the common-places of life that we forget the deeper biological significance of tone production. Perfect vocal function requires not only perfect condition of the immediate voice producing machinery but normal development of the general physical, sexual and psychic organism. Therefore in estimating the influence of a chronic infective focus in the pharynx, we should not ignore its general significance because it happens also to be directly connected with the organs of voice.

It is our belief that the improved vocal quality and power noted by singers, after removal of diseased tonsils, is often due as much to increased vigor and virility as to the changes in the throat itself. The biologist knows that when the artist is as he says, "in good voice," it means much more than merely that the larynx and vocal cords are in perfect condition. It means that the individual is abounding in vitality and free from depressing influences, physical or psychic.

With this comprehensive viewpoint and without present knowledge of tonsil pathology and its relation to general health, there is little difficulty in determining in what instances tonsils are detrimental to voice function. The question then becomes one of treatment. Manifestly the ideal procedure is to remove the offending organ, provided its removal does not involve immediate risk or hardship, or subsequent impairment that will weigh against the advantage to be gained.

The immediate risk or hardship is fully discussed elsewhere and we will consider now only the question of subsequent impairment. That such impairment, vocal and otherwise, does often result from attempts to remove tonsils, is evident to all who have occasion to observe. That such results are attendant upon proper and skillful tonsil surgery is emphatically not true.

When Hudson McKuen presented to the Clinical Congress of North America his masterly plea for less tonsil surgery he presented an array of evidence that convicted American rhinology of some dreadful crimes. But his pleading was not equal to his evidence and his logic limped badly at times. He placed great emphasis upon the statement that, none of the world's great singers had ever been tonsillectomized and seemed quite blind to the obvious fact that anyone having conditions calling for tonsillectomy could never become one of the world's great singers.

Dr. McKuen did not mean to plead for less tonsil surgery but for better tonsil surgery, which is a quite different thing and includes much more than is commonly described in articles upon the subject.

It includes the study, selection and preparation of cases for operation with more care than is customarily shown. It includes the removal of the diseased gland with more precision and more respect for the adjacent pharyngeal structures than is possible by many of the methods in vogue. Lastly, it includes the care, exercise and training of the

voice machinery after operation in ways altogether different from those usually employed.

It is this after care that I wish especially to describe, for the details of which the profession is indebted to Dr. J. R. McCleary, of Cincinnati. By his work in connection with the Cincinnati Conservatory of Music Dr. McCleary has finally answered the question as to the relation of tonsil surgery to voice function. Not only has he proved, as have others, that proper tonsil surgery is not detrimental to the voice but more completely than anyone else he has shown how in certain cases it may result in material improvement. The conditions necessary for such results are three: First, voice imperfection must be due directly or indirectly to tonsil disease. Second, the tonsils must be completely removed without injury to the other tissues of the pharynx and third, the after care must be such as to preserve and if possible increase the flexibility of the accessory voice producing structures.

The first consideration is of course obvious, for no one contends that the removal of normal tonsils is beneficial. The second is worthy of emphasis since the complete removal of the tonsil with no injury to the pharyngeal musculature is by no means common. A proper tonsillectomy leaves the palato-glossus, the palato-pharyngeus and the constrictor pharyngis entirely intact and free to perform their functions as well or better than before. With such an operation completed the after care becomes paramount and this should be described in some detail.

The use of strong antiseptic solutions in the tonsil fossa, either at the time of operation or subsequently, is of doubtful value. If instruments are clean the wound is surely as sterile as it can be made by any application. Naturally it soon becomes contaminated and must have frequent cleansing but this should be done with the least possible disturbance of the granulating area. The cleansing may be followed with a protecting and mildly antiseptic cerate, but no application remains sufficiently long to have any marked effect.

For purposes of voice function the consideration of first importance is the prevention of adhesions and maintenance of free muscular action.

The faucial pillars contain the palato-glossus and the palato-pharyngeus muscles, the former concerned with regulation of the resonance space above the larynx and the latter with the tension of

the vocal bands. Both pitch and quality may therefore be modified by changes in these structures.

Following an operation, even though properly made, adhesions may form that will hinder the free action of these muscles. Dr. McCleary's treatment consists essentially in the prevention of this, together with such systematic exercises as will increase the normal muscular action.

Besides the daily cleansing he takes care to separate the pillars freely from all possible attachments and applies cerate at the points of contact.

The patient is given exercises beginning a few hours after operation. First he is given chewing gum and directed to use it freely, which lessens the feeling of soreness and makes swallowing easier. The day after operation he is given vocal exercises, using the open vowel sounds and running the scale with tones as full as possible. Other exercises are the simulation of yawning and the protruding of the tongue as far as possible. Vocal practice, such as singing or calling to distant persons, is also given and on the third or fourth day full voice work with the piano is begun. Patients usually demur at these instructions, but it is surprising how easy it becomes and how rapidly vocal work becomes pleasurable.

Our experience confirms Dr. McCleary's teaching that the best results are obtained by putting these patients under an instructor and having these exercises carried out under his observation. Our associate, Dr. Alva Sowers, has perfected a routine for this purpose and we can best show the result by quoting the reports made by some of his "pupils." One, a voice teacher, reports a range two notes higher in the scale with greater ease and flexibility. Another says: "My range remains the same, but the tones are clearer and more brilliant. The timber is better and my voice has more resonance. Also I sing with more endurance and tire less easily." Another patient with a similar report adds that she attributes her improved voice partly to the increase in general vitality.

Without doubt we have yet much to learn upon this subject, but most of all we need to apply with more discrimination and patience the knowledge we already have.

ANAESTHESIA

As we advocate the use of a general anaesthetic in tonsil operations and have a strong preference for ether as a general anaesthetic, we shall, at the risk of tiring some of our readers, discuss at some length the physiology of general anaesthesia, the method of administration of the anaesthetic and state our reasons for preferring ether as the proper agent to be used.

Although the physiology of general anaesthesia is well understood, we shall recall its effect upon the nervous system. It first produces stimulation, then over-stimulation, this producing fatigue or depression; continued over-stimulation producing final paralysis and death

The brain and spinal cord are affected in the following order:

(1) The cerebrum, in the cortex of which we find the latest and highest development centers, these being the least stable and first affected.

(2) The cerebellum.

(3) The pons and ganglia at the base of the brain.

(4) The sensory fibers of the brain and spinal cord.

(5) Motor fibers of the cord.

(6) The medulla oblongata with its centers of respiration, circulation and vaso motor centers.

Considered in this way we have a basis for determining, by certain reflexes, the degree of anaesthesia.

The last reflexes lost are the corneal, laryngeal, peritoneal, perineal and patellar.

In the second stage, when relaxation is not complete, we have the following reflexes present and active:

Swallowing.

Sighing (Northrop, Philadelphia).

Rolling eyeballs.

Lid reflex.

Corneal reflex.

Lacrymation, accumulation in the inner canthus (Godfrey, Philadelphia).

Pupillary reflex.

The pulse is more rapid than normal (90 to 120), and respirations, besides being more rapid, are also apt to be irregular.

Continuing the anaesthesia, the reflexes become more and more

sluggish, until most of them are abolished in the third stage, when relaxation occurs. The respirations become deeper, fuller and stertorous; the pulse full and regular, but still more rapid than normal. The pupils are contracted and fixed, the jaw drops and the tongue falls against the posterior pharyngeal wall, causing interference with respiration, and this in turn interferes with the circulation producing increased C. O. retention, thus altering the pupillary reaction and causing dilated pupils. These must not be mistaken for the dilated pupils of bulbar paralysis or extreme over dose. This can be differentiated, if necessary, by testing the corneal reflex, which will still be active.

Continuing to give the anaesthetic causes the patient to pass from the physiological into the pathological stage and this may be classified into "early and late over dose" (author). "Early overdose" is recognized by the absence of all the reflexes except the corneal, which becomes sluggish and the pupils will be found dilated rather widely when the lids are raised. They react, however, to light by contracting, but are unable to maintain this contraction and immediately redilate to the former size. (In making this observation both lids should be raised, for the resultant reaction is four times as great as when one lid is raised.) The anaesthetic continued beyond this point will produce "late overdose" (anaesthetic shock, beginning bulbar paralysis, toxic anaesthesia), which is recognized by insensitive cornea, pupils dilated and fixed, surface cold and clammy, color pale or cyanosed, pulse rapid, weak and thready, respirations irregular and shallow and if the anaesthetic is continued, death.

Owing to the marked degree of relaxation necessary for tonsil operations, there is required an anaesthetic agent that will produce profound narcosis. To reach this degree of relaxation the patient must pass beyond the physiological into the pathological stage of anaesthesia without producing too marked a degree of toxaemia.

Ether is the only anaesthetic allowing this liberty without endangering life. We make this statement advisedly, from an experience extending over a score of years and after having used all agents and methods exploited by others. The only exception to the use of ether in all cases, is where pulmonary tuberculosis exists, for acute tuberculosis is aggravated by ether and latent tuberculosis may be awakened by it. In such cases chloroform should be used throughout the opera-

tion. We feel that the use of other agents in tonsil operations arises from the imperfect knowledge of the proper method of administration of ether. Before describing our method we wish to call attention to the advantages of ether over other agents.

It is the safest of all anaesthetics, in the hands of the occasional anaesthetist, because of its wide range or latitude of safety. Hewett and others give the mortality for ether as one to sixteen thousand, this including all cases no matter what the physical condition of the patient or the type of operation. We would place the mortality in tonsil work much lower, because of the short time required for the operation, the liberal supply of air taken in immediately the cone is removed and the aforesaid great range of safety, preventing toxaemia.

The mortality with chloroform is one to three thousand, as given by Hewett, while Waller claims it is seven times more toxic than ether, as proven by laboratory experiment. Thus it can be seen that the range or latitude of safety, during administration of chloroform, is very narrow as compared with ether and is confined to the stage of surgical anaesthesia or coma. Patients may die of acute dilatation of the heart in the early stage and while returning to consciousness. Beyond the surgical stage they may die from anaemia of the brain. There is also a later effect from chloroform which may prove fatal—that of fatty degeneration of the internal organs. While we personally have never had a fatality from chloroform, we have had several nearly fatal cases and have a personal knowledge of several deaths from its use during tonsil operations. For these reasons we have discontinued its use for routine work.

Nitrous oxide cannot be used safely, by the occasional anaesthetist, for it requires an expert to administer it and unusual care and dexterity, as the patient is never under its effect more than seventy seconds at any one time. As compared with ether we have found it very unsatisfactory for general anaesthesia in tonsil operations. Crile, who is possibly the greatest exponent of nitrous oxide and oxygen in the world, in his book of the "Anoci Association," dismisses the subject of tonsil operations with one line, "in the removal of tonsils and adenoids we still use ether or ether vapor," and as to the general danger of nitrous oxide he said, at one of the recent meetings of the American Medical Association in Atlantic City, that he was almost tempted to discontinue the use of nitrous oxide as a general

anaesthetic because of the example he set, as many deaths are being reported from the use of nitrous oxide in the hands of the inexperienced.

Ethyl chloride and its combinations are open to the same objections as nitrous oxide.

Ether is preferred to local anaesthesia (1) because cocain used about the head and face is dangerous, due to cerebral anaemia which may come on suddenly and cause death. (As a local anaesthetic novocaine should be used.) (2) Because of the psychic effect upon the patient produced by the sight of instruments, blood and unfamiliar surroundings. (3) If hemorrhage occurs in nervous patients it is much less easily controlled.

With proper care, in the administration of ether, it is usually possible for us to conduct the early administration so that no irritation or unpleasant odor annoys the patient, thus avoiding coughing, vomiting and excessive mucus which will otherwise occur. This robs chloroform of the one great argument for its use, which for a long time kept it in the field as an anaesthetic in tonsil operations, viz.: that it was pleasant, non-irritating and did not cause the formation of mucus.

Our technique of administration of ether is as follows: Where possible we prefer that the patient shall rest for twenty-four hours in bed because of the quieting effect upon the nervous system, this aiding materially at the time of the administration of the anaesthetic, the patient being tractable and less excitable. We have made a careful study of this pre-operative rest.

The diet should be restricted to liquids for twelve hours before operation, the last diet being given not later than six hours prior to the operation.

The bowels should be opened by enemata six to twelve hours before and the bladder emptied immediately prior the operation.

A careful examination of the patient should be made by the anaesthetist as to the general physical condition of the heart, lungs, kidneys, constitutional diseases and habits of life.

In patients beyond the age of twelve years a pre-anaesthetic dose of morphine (grain ⅙ to ¼) with atropine (grain 1/150 to 1/120) twenty minutes to one hour before operation, materially aids in quieting the patient at the time of operation, prolongs the period of relaxa-

tion, reduces the quantity of anaesthetic necessary and prevents the nervous excitement and sickness following the operation.

As the psychic element largely predominates the production of a successful anaesthesia, we prefer to start this in the patient's room rather than in a special etherizing room. Because of this psychic element it is wise, in older children and in adults, to inform them that the following sensations will be experienced:

(1) A slight sense of irritation in the throat will be noted, but by regular deep breathing this will be overcome.

(2) That smarting of the eyes may occur if the lids remain open, and it is for this reason that a towel or gauze is placed over the eyes and the patient requested to keep the lids closed.

(3) That a sensation of numbness and tingling will occur beginning in the fingers and toes and extending over the entire body.

(4) That buzzing or roaring sounds may be noticed in the head and ears.

(5) That a sensation of floating into space will be experienced, sounds will become louder and louder and more distinct, the intervals between will lengthen and seem almost interminable, but that the patient must not be disturbed.

The patient is requested to think of some pleasant thing, so that he may have pleasant dreams, for patients dream while under an anaesthetic, and the tendency is to have unpleasant dreams. All this will engage the attention of the patient and he will quietly pass into unconsciousness. We usually make these suggestions while the anaesthetic is being given.

In young patients, who are unable to appreciate the foregoing statements, their attention should be engaged by telling them a fanciful story with lots of action, or have them count aloud, instructing them after each count to blow; or, again, telling them that you are playing a game and the game is for them to blow through the inhaler (we call it a cage) and if they can blow faster than you can drop, that they win. Offer some small prize for winning.

In administering the anaesthetic it is wise to hold the cone quite a distance from the face, applying the ether drop by drop while engaging the attention of the patient as before stated. In this way he soon becomes accustomed to the odor, which will not be unpleasant, and the cone is gradually lowered. Should the patient make any resist-

ance or show discomfort, the cone should be elevated, giving a better admixture of air, while the anaesthetic should be continued. One or two breaths of a light admixture relieves all discomfort and the patient ceases to object. Children may roll about and may even crawl beneath the covers. We do not hold such patients, but apply ether to the cone and the vapor spreads, even travels under the covers and gradually its effect is noted. When the patient becomes drowsy, which he will in a short time, the cone can be applied closer to the face.

From this time the attention of the patient can be more readily engaged and suggestions made are carried out, if repeated several times in a firm but kindly voice. The conscious mind becomes less active and the subconscious mind receives and follows the suggestions. Fifty per cent. of partially anaesthetized patients are susceptible to suggestion. The cone at this stage may be placed close to or upon the face and a continuous rapid drop should be given. Any objections upon the part of the patient will be overcome by raising the cone slightly, continuously giving the anaesthetic.

Holding the breath, coughing, choking or swallowing in the early stage, indicates too great a degree of concentration and if not immediately corrected, by raising the cone slightly from the face, will be followed by excitement in the form of struggling, outcries, spasms of the glottis, etc. Repeated suggestions to the patient to breathe deeply, that he is getting air and that the arms and limbs are to be kept quietly on the table, are usually carried out by the patient and it is therefore not necessary to restrain him. In fact any restraint at this time usually increases the excitement.

The ether should be given in the same methodical way throughout the administration. If large quantities are poured on the cone it results in too concentrated a vapor, or it does not evaporate and anaesthesia becomes complicated by mucus, or the patient is insufficiently anaesthetized.

Just prior to unconsciousness there is a period of relaxation, known as the period of analgesia, which occurs between the first and second stages. This must not be mistaken for complete anaesthesia and may be recognized by the upper lid closing quickly when raised by the anaesthetist. Should this disturb the patient, he is told in a reassuring voice that everything is all right, to breathe deeply, that he is going to sleep.

Following this we have the second stage or period of unconscious motor activity and if the anaesthetic has been given by the drop method and not hurriedly, the only manifestation noted may be the momentary arrest of respiration due to the contraction of the chest muscles. This should give the anaesthetist no uneasiness, as it quickly passes off and the patient continues breathing regularly and deeply thereafter. (Caution—It is wise to raise the cone slightly from the face and continue the anaesthetic.)

Do not be misled into thinking that this is central respiratory failure and start artificial respiration. First test the reflexes and if present and active, you will know the patient is not sufficiently anaesthetized. Any attempt at resuscitation at this time will be followed by violent mental and muscular activity.

The patient is given the anaesthetic, in the same even regular manner, until the stage of relaxation is reached. This may be recognized by the relaxation of the muscles allowing the jaw to drop downward and backward, giving stertorous (brassy, snoring) breathing, absence of the reflexes, except the corneal and pupils contracted and fixed. (Caution—A very minutely contracted or pin point pupil indicates marked brain irritation and may be followed by projectile vomiting.) Vomiting indicates insufficient anaesthesia and is recognized by active reflexes. Dilated pupils from slight asphyxia may be present when vomiting is threatened, but is recognized as the second stage of anaesthesia by the presence of reflexes. At any stage in the anaesthesia the various reflexes must be balanced one against the other, to determine the degree of anaesthesia. The only constant and reliable reflex is the corneal, and this should be tested only when in doubt. The absence of this indicates immediate removal of the cone and free admission of fresh air or oxygen to the lungs. After a short time the anaesthetist becomes familiar with the finer reflexes, learns to appreciate their relative value and will not need to depend upon the corneal reflex.

The anaesthetic should be continued until the stage of slight overdose is reached, this being recognized by the absence of reflexes, except the corneal, which is found to be sluggish. The pupils will be unable to maintain their reaction to light. The cone should be removed and the operation begun. This will give an available anaesthesia of from one and one-half to three minutes, in which time one

or both tonsils may be removed, depending upon the desire of the operator.

While watching carefully the patient, the anaesthetist should consider the comfort and convenience of the operator. He should be ready to administer the anaesthetic at such times as the surgeon is not operating and should at all times keep well out of his way.

THE TONSIL OPERATION

In the light of present day knowledge it is an undoubted fact that, judging from the standpoint of necessity, many tonsils have been removed from patients where no clear history was elicited, nor were the local indications of the tonsils such as to guarantee an opinion that it was for the absolute good of the individual to operate. The last year or so, however, we find the laryngologists giving a great deal of careful thought and attention to the indications for the tonsil operation and the conscientious specialist today is the one who does not remove the tonsils from every case which is sent to him for this purpose, but arrives at his opinion, for or against removal, after a careful and thorough study of the individual case.

Before it is decided that the tonsils should be removed one or more of certain definite conditions must be present.

(1) The tonsils must be so large that they are an obstruction to deglutition or a hindrance to speech.

(2) The tonsils must show a disease of structure which it is impossible to remedy by local treatment.

(3) It must be definitely determined that the general condition of the patient is unfavorably influenced by the diseased condition of the tonsils.

(4) There must be a history of peri-tonsillar abscess.

From a study of the above indications it is evident that a great deal of time and co-operative study, by the internist and the specialist, must be given to each individual case before it is definitely determined that operation is necessary, it being assumed that both the internist and the specialist are skilled in their separate lines of work and in diagnosis.

Having determined that the case is an operative one, it should always be remembered that the tonsil operation is one of election

and not of emergency and every endeavor should be made to put the patient in the best possible condition for operation, so as to forestall the dangers which are known to exist in certain of these cases. With this thought in mind the patient should be thoroughly examined to determine the condition of the circulatory system, the lungs, kidneys, blood pressure and the condition of the blood as regards anaemia, coagulability and syphilitic infection. Mild or even severe anaemia may be due to tonsillar infection and such cases are not suitable for operation until, after a proper course of treatment, the condition is improved as far as possible, so lessening the liability to hemorrhage and improving our patient the better to withstand shock.

While this method of procedure may seem tedious and unnecessary to many laryngologists, we feel that the careful and scientific man and the one who makes a conscientious study of his cases, will agree that a certain percentage of those cases which exhibited post-operative complications would not have exhibited these had this course been pursued.

During the general treatment by the internist the local condition of the tonsil should be given very careful attention by the specialist. This means thorough cleansing of the tonsillar crypts, removal of detritus from the crypts and local medicinal treatment. If amelioration of the tonsil condition and a lessening in the size of the tonsil follows such local measures, it is, to the one experienced in these conditions, further strong evidence of the necessity for the operation. It will be found that, after such a thorough course of treatment is afforded these patients, there will usually be a marked improvement in the general condition of that class of cases where we have a directly diseased tonsil with systemic involvement. We have, however, learned from experience that cessation of this treatment means a return of the patient to the former condition unless there is subsequent removal of the tonsil.

Having reached the point where we know, from clinical experience, that the patient cannot be further benefited by local and general treatment, the time for operation has arrived and the first question that confronts us is, What is the best operation to perform? In determining this we must be guided by the object to be obtained, which is, *thorough removal of all diseased tissue, leaving intact normal tissue and this accomplished with the least discomfort and risk to the patient.*

It is today generally conceded that tonsillectomy is preferable to tonsillotomy. Every operator, of any experience, will agree that many of the worst cases which he has seen have been those in which a previous tonsillotomy had been performed. The only class of cases in which tonsillotomy might be performed would be the first class of our indications, where, to all appearances, the structure of the tonsil is normal, but it is abnormal in size and interfering with deglutition and speech. Even in these cases the advisability of tonsillotomy is extremely doubtful, if it is admitted, as above stated, that many of the worst cases we meet are cases in which tonsillotomy has been performed for this purpose. Many authors have called attention to this. Billings in his excellent article on Focal Infection (*J. A. M. A.*, September 12, 1914) states "tonsillotomy may add a sealing scar. * * *"

Having decided upon tonsillectomy as the suitable operation, we then have to decide how this shall be performed in order to best obtain the object of the operation.

The complete removal of the tonsil, as every laryngologist knows, can be brought about by various types of operation. In the first place we have the advocates of blunt dissection, this being brought about either by finger enucleation or various types of blunt dissectors. Another class advocates enucleation by sharp dissection, the one class claiming that blunt dissection is followed by less hemorrhage, the other class claiming that this is not so and that a clean, sharp dissection is followed by less local sloughing. Again we find those who use either blunt or sharp dissection of the anterior arch, the dissection of the posterior arch taking place by means of a snare or guillotine. Lastly we have that type of operation in which no primary dissection of either the anterior or posterior arch is performed, as in the Sluder, Beck or Davis operations. By these various methods very clean cosmetic results in skilled hands can be obtained.

In choosing from the vast number of described and practiced operations, it would seem that the operation which will best obtain the objects of the tonsil operation would be one in which especially a clean local result is secured with the least handling of tissue, provided, that this operation at the same time is of no greater risk to the patient, for, as regards the local results of our operation, certainly the greater the handling of tissues the greater the local disturbance which follows it. Studied from these standpoints there are two opera-

tions which appeal strongly to us:

(1). A finger enucleation of the anterior arch, the dissection of the posterior arch taking place by means of a snare.

(2) The operation as performed by Dr. Burton Haseltine, of Chicago; a sharp dissection of the anterior arch taking place by means of the modified Leland knives, the dissection of the posterior arch taking place by means of a guillotine.

In both of these operations the tonsil is not grasped until it is ready to be removed; they are both quickly performed and conform in every way to the objects of the tonsil operation. The Haseltine operation has the advantage, in that it can be used with either local or general anaesthesia, and for the one who uses local anaesthesia attains the object of the tonsil operation better than any operation thus far demonstrated. Operating as we do under a general anaesthetic, we have found that there is more primary hemorrhage following the Hasteltine operation than follows the finger enucleation of the anterior arch. To offset the claim of those who say that sharp dissection is followed by greater secondary hemorrhage than blunt dissection, the best argument is a series of cases performed by these two methods, when it has been found that there is no marked difference.

The tonsil operation should be performed in a well equipped hospital with proper interne service and this whether a local or general anaesthetic is used. As regards anaesthesia we prefer general anaesthesia. As a general anaesthetic ether is preferred and when using a local anaesthetic, novocain 2 per cent. It is our preference to have our patient in the hospital a day prior to the operation so that we can make observations and know that conditions are suitable for the operation.

The finger enucleation as above mentioned is performed as follows:

The patient, being under the general anaesthetic, is brought into the operating room and placed upon the operating table with a sand bag under the shoulders, so that the head is well thrown back and the blood will find its way into the naso-pharynx. As we operate standing at the left side, the patient is placed as close to this side of the table as possible. A sterile sheet is drawn over the patient to the neck and then a second smaller sheet is drawn over the head so that the face is exposed through an oval opening in the sheet. This sheet is wide enough to cover the Kelly pad and the end of the operating table.



Figure 5. The index finger having entered the tonsillar fossa, is shown dissecting the anterior arch from the tonsil.

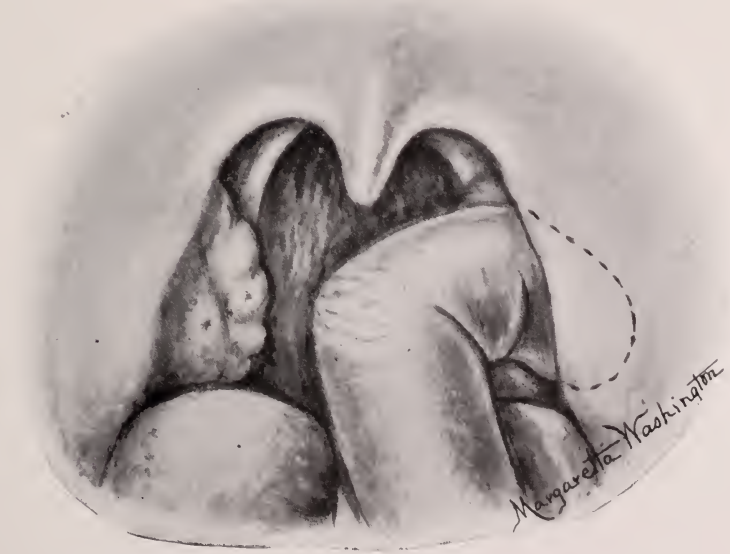


Figure 6. The finger having severed the upper part of the anterior arch, is here shown completing the dissection of the upper pole of the tonsil.

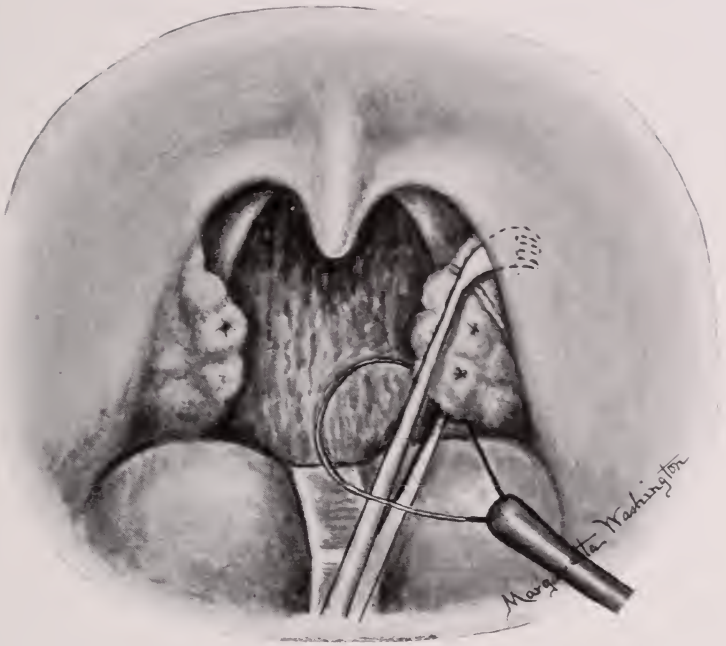


Figure 7. The tonsil is being grasped by the forceps and the snare is being slipped upward to engage the tonsil.

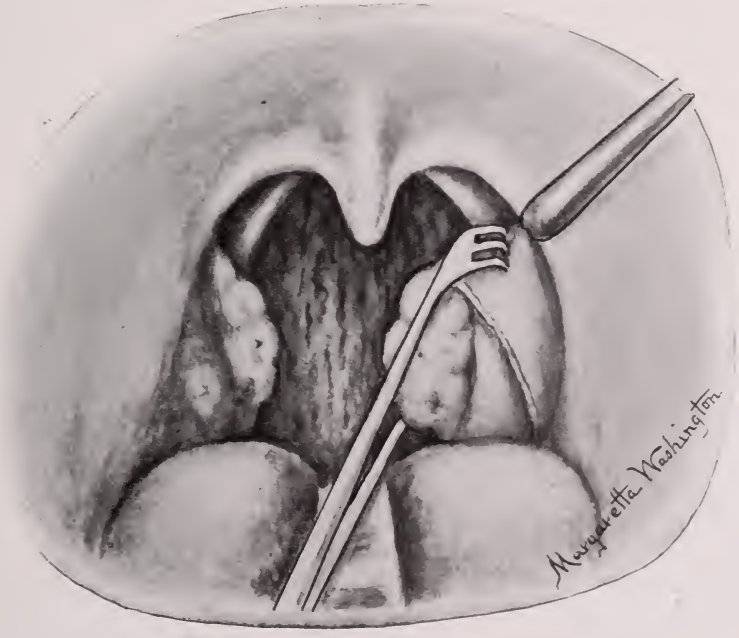


Figure 8. The snare has disappeared behind the tonsil and is dissecting it from the posterior arch.

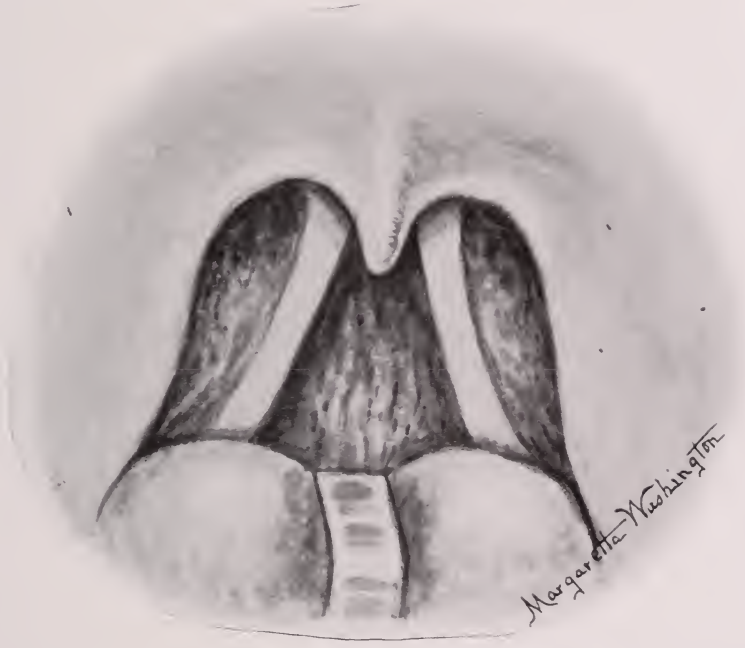


Figure 9. The completed tonsil operation, showing the clean arches and tonsillar fossae.

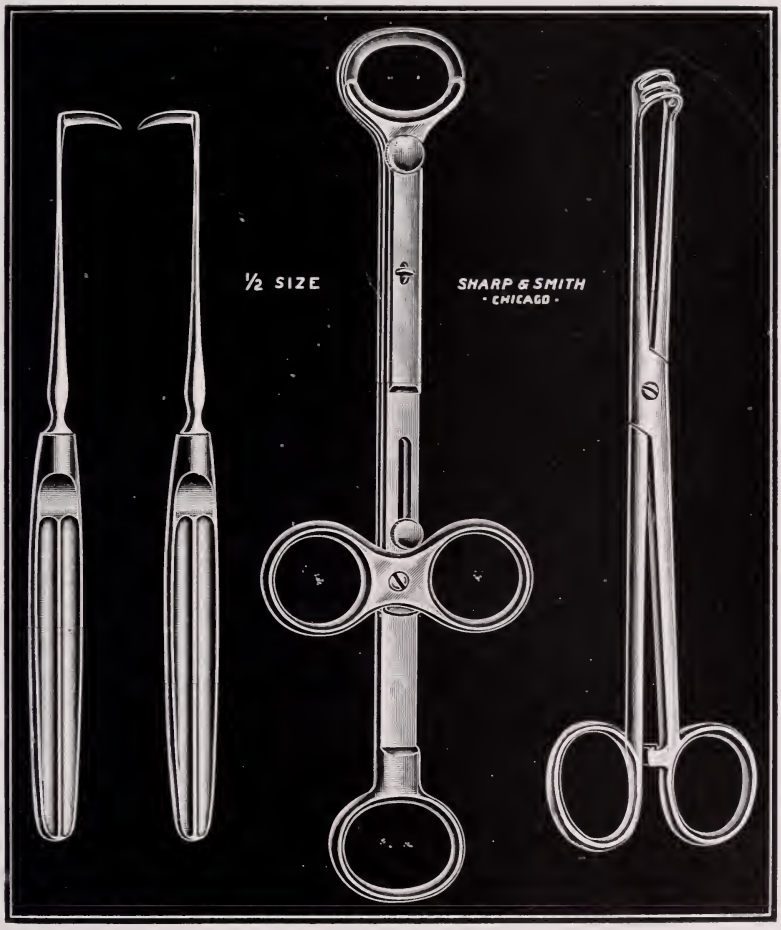


Figure 10. Special instruments used in the Haseltine operation.

The anaesthetist sits at the head of the table, the operator stands at the left side of the patient facing the head of he table and the assistant stands slightly in front of the operator, facing the side of the table.

The mouth gag is introduced upon the right side, the teeth being thoroughly inspected before introduction, care being taken to avoid injury to the lips or tongue. The index finger is introduced into the mouth, being flexed at the second joint, the tip of the finger placed at the junction of the upper and middle third of the anterior portion of the tonsil and pressure made in the line of cleavage. The finger readily slips into the tonsillar fossa, is swept rapidly downward, severing the lower portion of the anterior arch from the tonsil, and is then swept upward over the upper pole of the tonsil, severing this from its attachments. The assistant then hands the tonsil forceps, over which the snare has been slipped, to the operator, who grasps the tonsil and slips the snare over it, removing the tonsil as shown in Figures 5, 6, 7, 8, 9. With slow closure of the snare the primary hemorrhage, in the average case, is slight. A sufficient time is allowed to elapse for the bleeding to stop physiologically. When the bleeding has ceased the arches and fossa are carefully inspected. The second tonsil is removed in the same manner. In the finger dissection the left index finger is used for the left tonsil and the right index finger for the right tonsil.

Where a local anaesthetic is used we prefer operating after the patient has had a good meal, as we believe we are less apt to have a toxic effect from our anaesthetic. The solution is injected by means of a Street syringe at four or five points through the anterior arch and in the supra-tonsillar fossa, the patient being ready for operation within a minute following the injections.

The special instruments (see Figure 10) used in the Hasteltine operation are as follows: Two curved Leland knives, being modified by having sharp points (the original Leland knives having blunt points); a forceps, much like the one known as the Andrews, although having a longer and heavier jaw and bent almost at a right angle with the shank, and a guillotine, which must be rigid, sharp and cut toward the operator. The Leland knives being right and left, the one is used for the upper incision on one side and the lower incision on the other, and vice versa.

The operation (see Figures 11, 12, 13, 14) is performed as follows:

The blade with curve downward is passed behind the anterior pillar at the point where it is free from the tonsil, is then carried downward, curving toward the pharynx and brought out with a rotary motion of the handle so that the plica and the entire attachment of the pillar to the tonsil is severed with one quick cut. The other blade is entered at about the same place and carried upward with a similar motion to the level of the upper pole of the tonsil, severing any higher attachments that may exist. This completes the dissection and is all that is necessary in any case. The knife used is the only type which will reach around the so-called "fish gill" pillar, lying antero-posteriorly over a buried tonsil.

We are now ready for the application of the forceps, which is an important step and not at all like the simple biting into the tonsil as usually done. The forceps are slipped through the fenestrum of the guillotine and passed around back of the anterior pillar, just as the knife has been. It is then opened and the upper jaw passed over the upper pole of the tonsil well out toward the pharyngeal wall. This often means coming forward under a "fish gill" pillar, as the fossa is often very deep and the tonsil mass larger than is at first apparent. The lower jaw is pressed downward to engage the base of the tonsil as well as possible, the effort being to include the entire gland, as the obstetric forceps includes the baby's head.

With the forceps closed and locked, the guillotine is slipped downward, when, with a slight pulling and wiggling motion, the gland will be seen to slip through the fenestrum with a quick movement, like the turning inside out of a glove finger, the pillar being entirely retracted from the tonsil mass. The guillotine is then quickly closed and a perfectly enucleated tonsil is in the operator's possession.

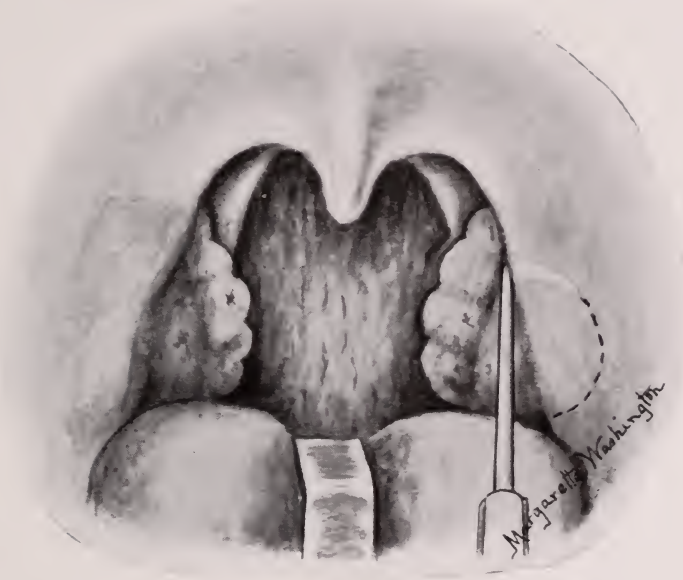


Figure 11. The knife, curve downward, inserted above the plica, is seen through the anterior arch. A curved sweep downward separates the arch from the tonsil.

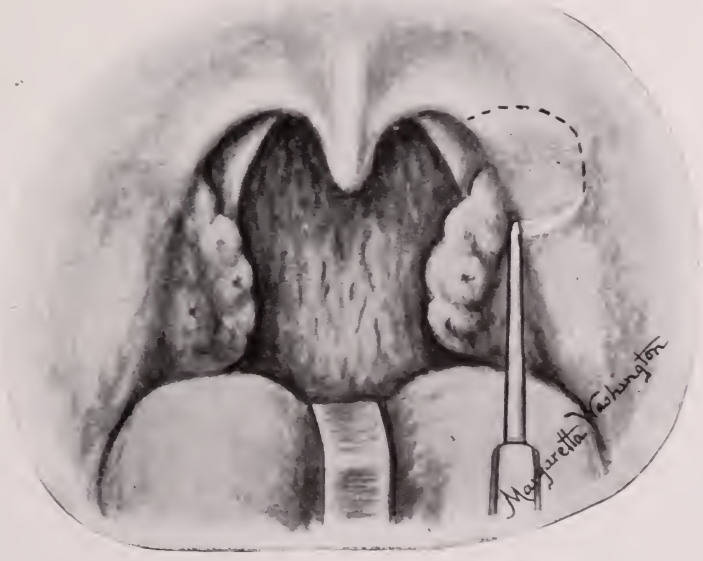


Figure 12. The knife, with its curve upward, is seen through the anterior arch. A curved sweep upward completes the dissection of the anterior arch.

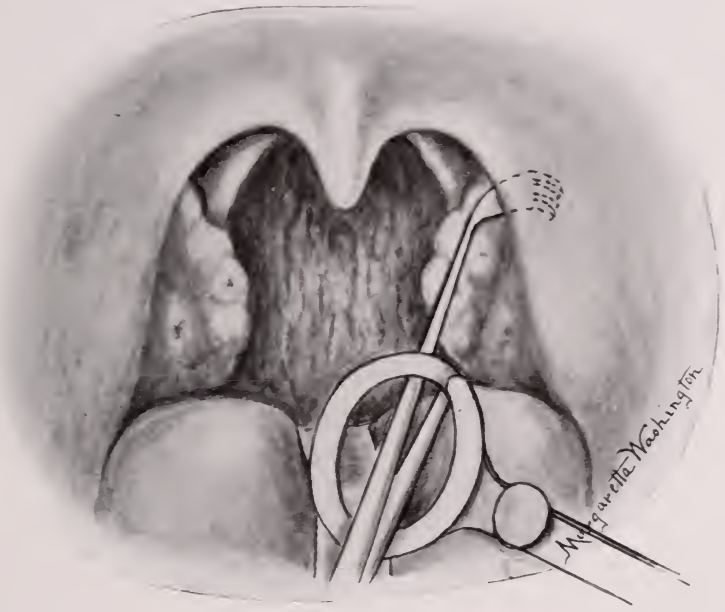


Figure 13. The jaw of the forceps is seen reaching well back in the tonsillar fossa and grasping the tonsil. The lower jaw engaged the lower portion.

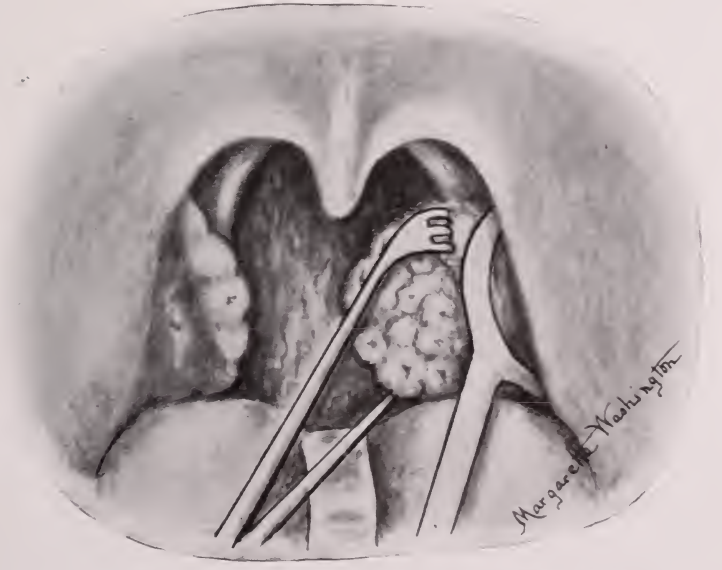


Figure 14. The guillotine, being pressed back against the arches, the tonsil is engaged by a slight wiggling motion and severed from the posterior arch.

The operations as described have proven very satisfactory in every way, and this statement is made after repeated practical application of other operative methods and a thorough study of the after results. We feel sure that our deductions will be proved by the specialist who has thoroughly mastered the technique of these operations.

Too little attention is paid to the post operative treatment of tonsillectomies and the bad results attributed to them is often due to this negligence. The after care in tonsil operations is just as important as is the after care in mastoid or other operations, and in order to obtain excellent results great attention should be given to the post operative treatment. Starting with the day following the operation, the tonsillar fossae should be inspected, a gargle of hydrogen peroxide should be used, this to be followed by careful mopping of the surfaces of the fossae, after which yellow oxide of mercury ointment should be applied over the surfaces. This treatment should be continued until the surfaces are entirely healed. The use of the voice should not be forbidden, and indeed in singers it is of advantage to have them start, the day following the operation, with vocal exercises such as they are accustomed to use when practicing. We know from experience that this method of procedure, systematically carried out, will leave our patient ultimately with clean arches and little scar tissue. In many of our earlier cases, before this method was used, we found a pronounced development of scar tissue with drawing together of the tonsillar arches, especially at the bases, and some of these cases exhibited symptoms of pain and distress.

The complications occurring after tonsillectomies may be grouped as follows:

(1) Mild or severe oedema of the tonsillar arches, soft palate and uvula.

(2) Hemorrhage.

(3) Sepsis of mild or severe degree.

(4) Ear complications.

(5) Pneumonia.

In cases exhibiting stiffness of the jaws it has been our observation that this was due to the faulty method of the anaesthetist in manipulation of the jaw.

For oedema of the uvula and arches a very efficient remedy is a gargle of glycerine containing three to five per cent carbolic acid. It

is surprising how rapidly these conditions will respond to this treatment.

In considering hemorrhage we would consider it as hemorrhage at the time of the operation and that which comes on within a few hours or days, subsequent to the operation, calling the first, primary and the second, secondary hemorrhage. From clinical experience we have learned that if the primary bleeding has stopped physiologically without any manipulations, that secondary hemorrhage is rare and that therefore a sufficient time should be given, following the enucleation, for the physiological process to take place. If this plan of waiting is adopted, many of the so-called hemorrhages will cease promptly without the manipulation and further, we believe that manipulation, other than perhaps simple pressure, should not be used. This applies even to mild types of arterial hemorrhage. We do not wish to be understood as stating that there is not now and then a case in which we must resort to ligation or the suturing of the arches over a pack, but we do wish to be understood as stating that many of the so-called hemorrhages have been due to excessive manipulations and also that these manipulations very often account for distressing symptoms of which the patient complains later. We never proceed with the removal of the second tonsil until we are sure the bleeding of the first tonsil has satisfactorily stopped.

Through the courtesy of Dr. J. Leslie Davis, of Philadelphia, we present Figures 15, 16, 17 and 18, from his most excellent article on "Fixed Sources of All Hemorrhage from Tonsillectomy and Its Absolute Control," in which he states that the tonsillar artery, a branch of anastomosis of the descending palatine and ascending palatine, is the vessel of paramount importance from the standpoint of arterial hemorrhage in tonsillectomy and has given an excellent method for the control of this by ligation. Clinically we have confirmed Dr. Davis' assertion concerning this source of bleeding, but we would further state that we have also encountered arterial bleeding, and at times quite active, from the fossa inferiorly, from the inferior tonsillar vessels.

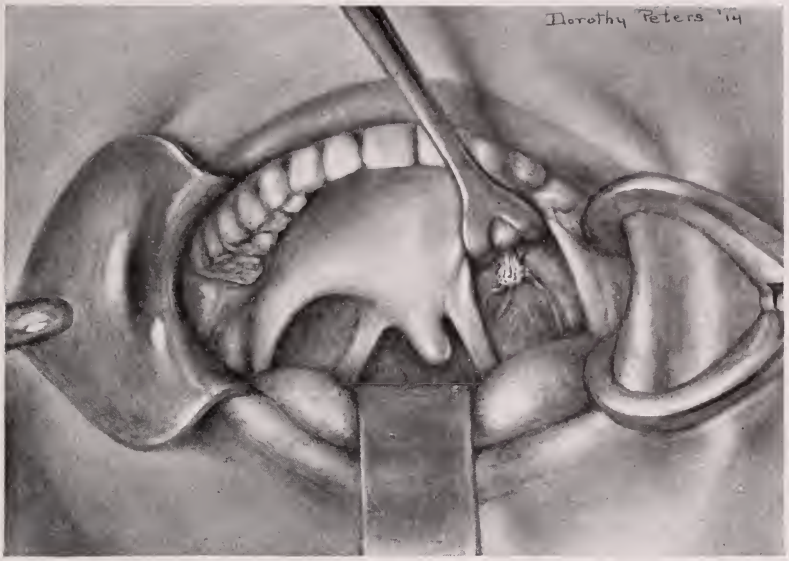


Figure 15. The right fossa shows the position of faucial pillars immediately after the enucleation has been completed. Each pillar margin is left smooth and perfectly intact. On the left side the anterior pillar is retracted superiorly to expose the point at which the true tonsillar artery enters the fossa and the vein passes out. These severed vessels with surrounding connective tissue leave a small projecting stump which facilitates the grasping of the artery with the hemostat. Radiating downward from the stump can be seen two or three small vessels running beneath the muscular aponeurosis. These are veins that permeate and at times penetrate the superior constrictor muscle wall from without, running upward to join the palatine plexus.

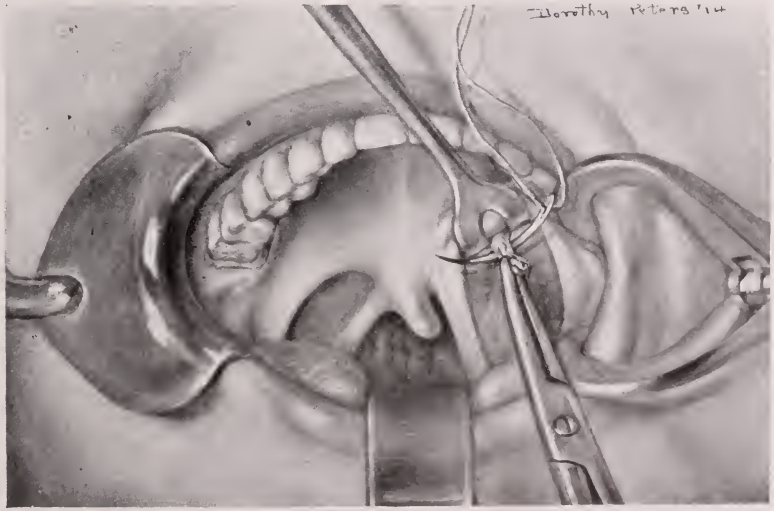


Figure 16. Showing how the stump is grasped with hemostat and the introduction of the suture ligature with short slightly curved needle. The needle penetrates the tissues on the floor of the fossa at just sufficient depth to hold the catgut in place while it is being tied above the artery. Immediately following the enuclation of the tonsil I usually hold a gauze sponge pressed firmly within the fossa for about a minute to check the first flow of blood before the hemostat is applied.

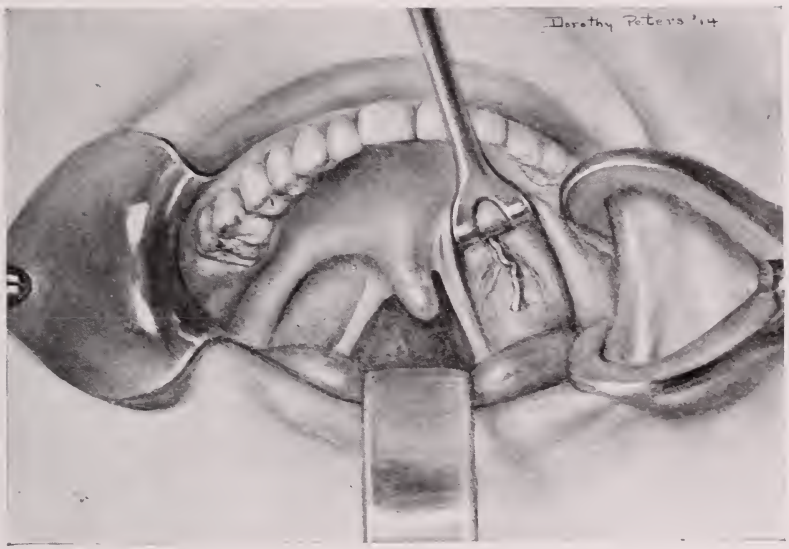


Figure 17. Showing the occasional occurrence where the artery was severed at or near its entrance into the tonsil, leaving the remaining portion detached from the wall and dangling loosely from its superior point of entrance into the fossa. This condition has no doubt perplexed many operators from the fact that while it is bleeding and the fossa is filled or covered with blood the artery itself cannot easily be seen, giving the appearance of multiple points of hemorrhage, as its position is shifted in attempts to apply astringents or pressure, etc., according to the older methods. By the suture-ligature method, simply retract the pillar and grasp with hemostat in the usual way at its upper entrance into the fossa and introduce suture-ligature as shown in Figure 11.



Figure 18. Showing manner of holding the ligature ends for tying. The right hand end of the ligature is held well outside of the mouth, thus giving a clear view of the field of operation, while the other end is held secure by being wound around the little or ring finger of the left hand, leaving the index finger free to press downward upon the knot as it is drawn upon the vessels. Two knots are sufficient for security.

The operation as performed by the Haseltine method gives one ample opportunity to observe the points of bleeding. The first incision divides the smaller branches of the anterior tonsillar vessels supplying the plica. With the second incision upward no special vessels are divided. With the evulsion of the tonsil and severing, the superior tonsillar vessel is cut as well as the inferior vessels. Venous bleeding will occur if the pillars are injured during the operation. The technique of the Haseltine operation or the finger dissection as described by us, renders injury to the arches less likely to occur.

It is a common, in fact, it is almost a constant clinical observation, to have in children a post operative temperature eight to ten hours after operation ranging, from 99° to 100° or 101°, with pulse correspondingly increased. This post operative temperature usually subsides in twenty-four hours.

Sepsis, following the tonsil operation, is happily a rare condition and does not come on until twenty-four or forty-eight hours following the operative procedure, when it may reach 102° or 103°, associated with chilliness, sweating and generalized aching. In these cases the throat usually presents a dusky red appearance. The treatment of this condition is rest, liberal easily assimilated diet, large quantities of water and local cleanliness with mild antiseptic washes.

We pay a great deal of attention to the kidney function as a contributing factor in post operative temperature. It will be found that acute urinary suppression occurs, and this we have especially noted in female patients.

In a small percentage of cases, following tonsillectomy, acute and sometimes very intense pain occurs in the ears. In the greater number of these, however, the pain is a referred one from the operated area. In a long series of cases operated we have had two cases of acute otitis media. On account of this aural complication some operators resort to irrigation of the nose and naso-pharynx with antiseptics. The efficacy of this procedure is open to criticism, since the aural complications occur in about the same percentage as without irrigation.

Pneumonia is an infrequent and much dreaded complication following tonsillectomy. It is due to lack of care while the patient is under the anaesthetic, or as a result of sepsis, or from inspiration of blood.

The tonsil operation is not a simple procedure and should never

be undertaken by one who has not a thorough knowledge of the anatomy of the tonsil and its surrounding structures. In addition to this, one must have acquired his operative technique under skilled direction, must have seen the operation performed many times by expert operators and must be one who understands thoroughly the complications which may occur and the management of these.

A NEW AND IMPROVED TRIAL FRAME

A. E. Ibershoff, M. D.,
Cleveland, O.

THAT the average trial frame is an uncomfortable and in many respects an unsatisfactory device is a criticism to which the great majority of its users will no doubt subscribe. On the other hand, opinions differ widely as to what would constitute a thoroughly practical and satisfactory device. Instrument makers have learned, often to their sorrow, that the personal equation of the surgeon brings forth a wide diversity of ideas as to the proper construction of even the simplest instruments. It is extremely doubtful, therefore, whether a trial frame could be made which would meet the approval of even a majority of the profession. Yet I believe that any device that will eliminate some of the faults of the frame in use and offer the advantages of comfort, simplicity, range and ease of adjustment and, above all, accuracy and improved construction, will be welcomed as a distinct advance. To this end I have employed every possible mechanical resource in the construction of each individual feature in the hope of solving the problem by elimination. After a lengthy trial of the final model I make so bold to offer the same for your consideration.

In designing this frame my attention was first directed to eliminating the double set screw adjustment of the nose-piece. A small flat arm was made to extend forward from the cross-arm at an angle of thirty degrees. To this was attached a hinge-jointed block into which a slit was cut and through which was passed a slender metal strip. To the lower end of the strip was attached a wide oval plate with a properly curved surface to serve as the saddle and to the upper end a small flat oval plate. A single set screw passes through the anterior portion of the hinge-block and when tightened sets the sliding strip and coincidentally binds the hinge-joint, making the latter perfectly rigid. Thus we accomplish both up and down as well as in and out adjustment with a single set screw and cause the saddle plate to sit flat upon the nasal slope, relieving all irritation from this source

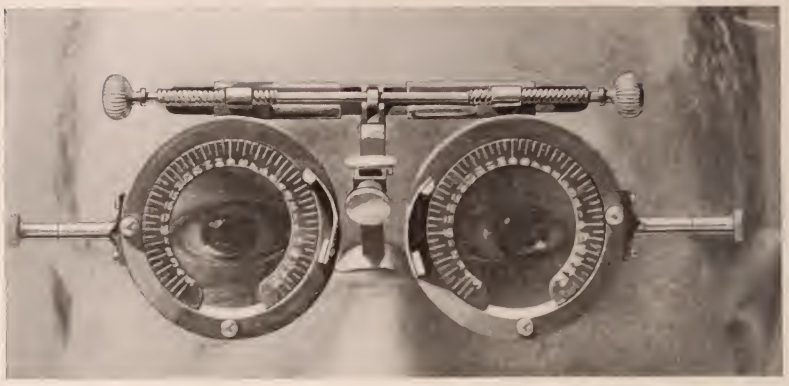


Fig. 1.

Next came the lens chamber. Here a still more radical departure was made from the old standard. The graduated "arc" which in all frames now in use surrounds the lens was placed within the lens chamber, its degree numbers being seen through the lens when the latter is in place. This obviously reduces the aperture (arbitrarily to a diameter of one inch) and so serves to eliminate much of the aberrant periphery of strong lenses, brings the axis mark of cylindrical lenses directly over the degree marks on the circle, facilitates a quick and more accurate pupillary adjustment and reduces the possibility of looking around, instead of through, the lenses. The graduated arc extends around three-quarters of the circle, leaving a space below to facilitate the reading test without readjustment of the frame. In the assembling of the frame the arc is merely sprung into place and without any other anchorage serves to hold the movable chamber in contact with the geared pinion, thus making the bearing complete.

The revolving chamber is grooved to ride on the periphery of the graduated circle and so constructed that the gears mesh in a common plane and not at right angles, as in the present trial frame. This serves not only to eliminate friction and binding, but prevents unmeshing the gears. The two lens springs are materially shorter and are in reality a single spring split a part of its length; they are armed at the end with small smooth metal blocks, having flat apposed surfaces and grooved to receive the lenses. They cannot foul each other, neither can a lens be jammed between the lower spring and the revolving disc, thus insuring perfect freedom of lens interchange under all con-

ditions. A similarly constructed spring on the rear of the graduated disc accommodates a third lens before the eye.

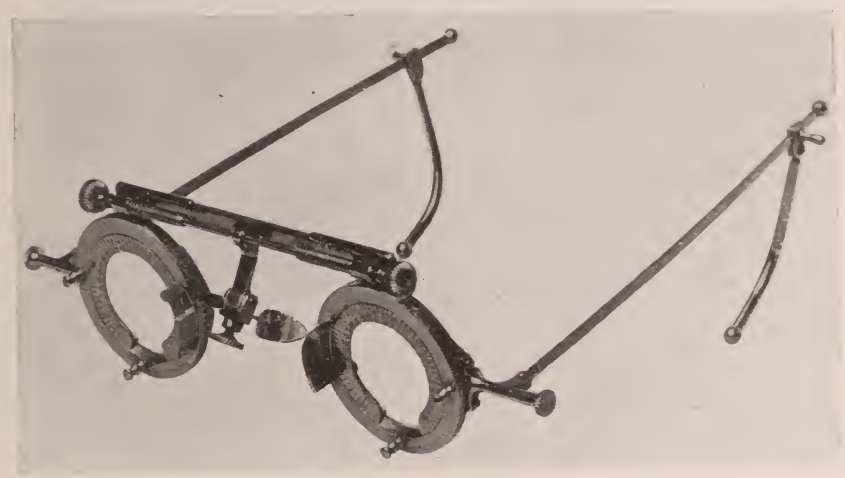


Fig. 2.

The temples are flat strips of hardened steel five and one-half inches long, slightly curved to shape to the head, and by their attachment to the pinion housing allow of half an inch increase in the temple width. On each temple slides a small metal sleeve to which is attached a vertical piece constructed of copper tubing about the size of a goose quill and so shaped as to conform as closely as possible to the curve which marks the attachment of the auricle. At the upper end of this vertical piece is a hardened steel tooth which binds against the temple when backward traction is exerted. This allows of an instantaneous adjustment of every conceivable temple length from zero to five and one-half inches maximum. And finally as the vertical piece is jointed to the sleeve it is readily folded up like a jack-knife when the frame is not in use, thus doing away with the protruding temple ends of the old frame.

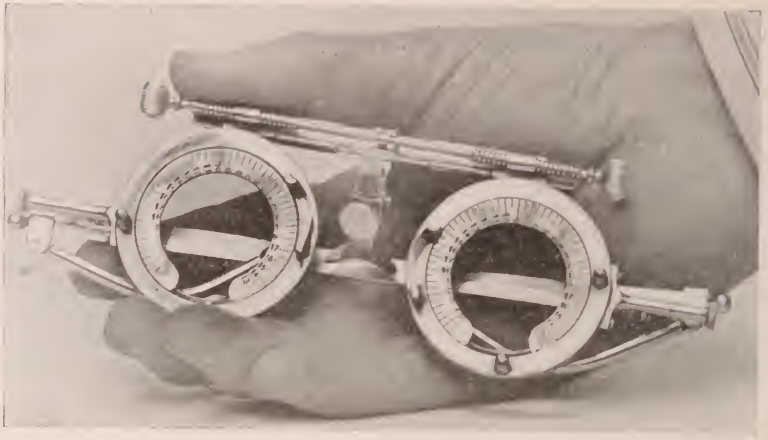


Fig. 3.

The frame is constructed entirely of nickled brass and steel without celluloid or other facings and can therefore be freely sterilized by boiling. It is readily taken apart for cleaning and as quickly assembled. It is far the simplest complete trial frame ever devised, its component parts numbering less than half those entering into the average frame now in use.

To recapitulate briefly, the new frame offers the following specific advantages and improvements:

1. Single set screw adjustment of nose-piece and broad saddle riding flat on nasal surface.

2. Rack and pinion gear in same plane insuring reduced friction and freedom from unmeshing of gears.

3. Graduated arc within lens chamber, bringing axis mark on cylindric lenses directly over degree reading. Arc open below to facilitate reading test.

4. Smaller lens space facilitates pupillary adjustment, prevents "seeing around" the lens and eliminates much of the aberrant periphery of strong lenses as well as the ground glass portion of the cylinders.

5. Shorter split springs with block ends prevent fouling or jamming of lenses.

6. Shorter posts keep lenses more nearly in the same plane.

7. Temple attachment to the pinion housing insures an addition of half an inch to the temple distance.

8. Sliding ear-pieces on the temples allow an infinite range of

9. Folding ear-pieces do away with projecting ends when frame is not in use.

10. Large tubular ear-pieces avoid post-auricular irritation.

11. Anterior worm adjustment for pupillary distance permits closer apposition of frames to the face, bringing lens cells into closer proximity to the eyes.

12. Entire frame of nickeled steel—no celluloid or other facings—permitting sterilization by boiling.

13. Number of parts entering into the frame less than half that comprising the standard frames.

In conclusion let me add that I do not offer this suggestion as the last word in trial frame construction. Time and usage will undoubtedly suggest additions, alterations and eliminations, but I trust that those who have felt the inadequacy of the treatment now in use may find in this a partial solution of a very practical problem.

822-4 Rose Bldg.

SOCIETIES

The Philadelphia, Eye, Ear, Nose and Throat Society held its regular meeting in the Hahnemann Medical College, Monday evening, May 10, at 7 o'clock. Dr. H. S. Weaver in the chair.

The scientific program consisted of the reading of interesting abstracts from the ophthalmological literature by Dr. H. L. Gowens.

J. V. F. Clay, *Secretary*.

COLORADO OPHTHALMOLOGICAL CONGRESS

Partial list of papers to be read at the Congress in Denver, July 22d and 23d.

Protection of the Eyes from Harmful Radiations in the Various Professions, Trades and Industries. Dr. Nelson M. Black, Milwaukee, Wis.

Herpes Zoster Illustrated by Clinical History of Five Cases. Dr. Burton Chance, Philadelphia, Pa.

Business and Office Methods in Special Practice. Dr. Linn Emerson, New York.

Albinism in Man and Animals with Special Reference to Eye. Dr. W. E. Gamble, Chicago, Ill.

The Routine Treatment of Senile Cataract by Expression, with a Sliding Conjunctival Flap. Dr. H. Gifford, Omaha, Neb.

The Blind Spot. Dr. H. S. Gradle, Chicago, Ill.

Juvenile Recurring Hemorrhage, Massive Exudation and Tuberculosis of Retina. Dr. Edward Jackson, Denver, Colo.

Arrest of Cataract at an Early Stage. Dr. E. L. Jones, Cumberland, Md.

Is Migraine a Forerunner of Glaucoma? Dr. P. S. Lamb, Washington, D. C.

Peripheral Annular Infiltrate of Cornea Following a Scleral Perforation. Dr. Francis Lane, Chicago, Ill.

Conscious Vision in Development of Amblyopic Eye. Dr. F. P. Lewis, Buffalo, N. Y.

Ocular Tuberculosis Caused by Tuberculosis of Neighboring Sinuses. Dr. W .H. Luedde, St. Louis, Mo.

Use of Lead Styles in Treatment of Stenosis of Lacrimal Duct. Dr. H. Moulton, Fort Smith, Ark.

Carcinoma, Apparently Primary, in the Uveal Tract. Dr. E. R. Neeper, Colorado Springs, Colo.

Concerning the Surgical Treatment of Retinal Detachment. Dr. E. S. Thomson, New York.

Management of Eyelids During Cataract Operation. Dr. D. T. Vail, Cincinnati, O.

Mydriatic Action of Dextro-Hyoscyamin. Dr. Meyer Wiener, St. Louis, Mo.

Complete Left Lateral Hemianopsia with Glycosuria as Result of Slight Trauma. Dr. F. E. Woodruff, St. Louis, Mo.

Trephining Versus Iridectomy in Glaucoma. Dr. H. W. Woodruff, Joliet, Ill.

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CONTENTS FOR AUGUST, 1915

EDITORIALS

Page

The O. O. and L. Society—1915 Meeting 647

Comment on Dr. Haseltine's Brain Abscess Case 648

Announcement 648

ORIGINAL COMMUNICATIONS

A Rare Case of Cerebellar Abscess (with discussion). By Burton Haseltine, M. D. 650

Pernicious Anaemia. By J. A. Ferree, M. D. 673

The Eye from a Neurological Standpoint. By J. Richey Hornor, M. D. 676

Congenital Abscence of the Arteria Centralis Retinae with Embryonic Remnants over the Macula Lutea. By Ralph I. Lloyd, M. D. 681

Hay Fever and Its Treatment. By George B. Rice, M. D. 683

Vaccine in Hay Fever. By W. H. Watters, M. D. 687

So-Called Stock Vaccines and Their Value in Suppurative Middle Ear Disease. By Douglas Macfarlan, M. D. 691

Post-Graduate Instruction. By Charles Deady, M. D. 697

Four Interesting Atupical Cases of Mastoiditis. Two with Intracranial Complication. By J. V. F. Clay, M. D. 700

A Vacation in Central America. By W. H. Phillips, M. D. 708

HOMOEOPATHIC MATERIA MEDICA AND THERAPEUTICS

Occipital and Cervico-occipital Headaches. By Augustus Korndœrfer, M. D. 715

CORRECTIONS 722

ABSTRACTS 723

CORRESPONDENCE 733

NEWS ITEMS 737

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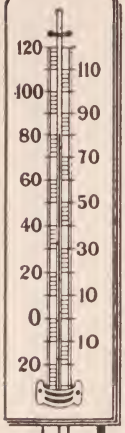
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Vol. XXI AUGUST, 1915 No. 8

EDITORIAL

O. O. AND L. SOCIETY—1915 MEETING

The twenty-eighth annual session of the O. O. and L. Society measured up to the usual high standard set by numerous predecessors, both in attendance and in the quality of the scientific discussions.

The keynote of President Myers' address was a strong plea for improvement in post-graduate training in America. It contained the suggestion for the accumulation of an endowment fund to be applied either to a new institution for the exclusive training of specialists, or to be proffered our present post-graduate school in New York.

This very important matter was referred to a committee to be appointed by the new president.

The action of the officers, substituting binders for the Journal instead of the usual transactions, thus saving a snug sum to the society each year, was approved.

Officers chosen for 1916:

President—Dr. William H. Phillips, Cleveland, O.

First Vice-President—Dr. A. E. Cross, Worcester, Mass.

Second Vice-President—Dr. Harold A. Foster, New York City.

Secretary—Dr. Ira O. Denman, Toledo, O.

Treasurer—Dr. W. M. Muncy, Providence, R. I.

Necrologist—Dr. Geo. W. Mackenzie, Philadelphia, Pa.

Censors—Dr. Geo. W. Mackenzie, Philadelphia, Pa.; Dr. F. C. Sage, Waterloo, Iowa; Dr. G. D. Arndt, Mt. Vernon, O.; Dr. C. E. Allen, Kansas City, Mo.

The 1916 meeting will probably be held in Baltimore, Md., with the American Institute.

Ira O. Denman, Secretary

COMMENT ON DR. HASELTINE'S BRAIN ABSCESS CASE

We wish especially to call the attention of our readers to the report in this issue of a case of bilateral cerebellar abscess reported by Burton Haseltine, of Chicago, before the Homoeopathic Ophthalmological, Otological and Laryngological Society at Chicago, June 30th.

So far as it is possible for us to say at the present time this is the first case of bilateral cerebellar abscess with recovery ever reported.

Quoting Dr. Bernecker, of Lincoln, Neb.:

"Neumann in his book on Cerebellar Abscess (London, 1909) gives statistics of one hundred and sixty-three cases. In four the abscess had extended from the right to the left side; death resulted in spite of two operations. He also cites several cases of multiple cerebellar abscess, resulting in death in all but one case." In this, our case, the first abscess was on the left side, the second one behind it.

"Milligan (*Journal of Laryngology*, January, 1915) reports twenty-seven cases of cerebellar abscess, none of these bilateral; seven on right side, twenty on left; cured, seventeen; died, ten."

"Dench collected one hundred and two cases, and Korner in two reports collected seventy cases. None ever bilateral."

"Dean reports a case of multiple cerebellar abscesses—three abscesses opened at three different operations—in which the patient recovered. He does not state the exact localization of the abscesses, whether bilateral or not."

"Heimann gives the largest collection of case reports of brain abscess, including one hundred and eighty-six cerebellar abscesses. Of these forty cases were cured by operation. Some were not operated. In ten cases two abscesses were present. Of the one hundred and eighty-six cases, fifty-four were on the right side, eighty on the left side, fifty-two locations not stated or known.

"Acland and Ballance (*St. Thomas Hospital Report*, 1896) give statistics of one hundred cases of cerebellar abscess, one of which was bilateral, operated and died."—W. H. P.

ANNOUNCEMENT

Dr. J. Ivimey Dowling, of Albany, N. Y., will act as associate editor for the September number of the Journal. Dr. Dowling

served as President of the O. O. and L. Society during the 1913-14 term. He has given us the Dowling argyrol tampon treatment of accessory sinus diseases, which is being generally recognized as a valuable form of treatment for these conditions. His services as associate editor of the Journal will be no less appreciated than his former services to the cause of our specialty.

Dr. A. Worrall Palmer, former owner and associate Editor of this Journal and of the *Homœopathic Eye, Ear and Throat Journal*, died in New York June 10, 1915, aged 54, of pernicious anæmia. He was sick for more than two years. A sketch of Dr. Palmer's life will appear in the next issue.

A RARE CASE OF CEREBELLAR ABSCESS*

BURTON HASELTINE, M. D.,
Chicago.

MY presentation of this case will be somewhat informal, as I hope to bring out the most instructive features of the case through the discussion.

I will not attempt to give any detailed description of the subject of cerebellar abscess. Dr. Bernecker has been good enough to study the literature for me, and has given me a brief outline of what he has found on the subject of cerebellar abscess. I will give you the principal points of this, merely to refresh your memories. He says:

"After a review of all the important cases and collections of cases reported of brain abscess, and many individual reports, I have been unable to locate even one case of bilateral cerebellar abscess which recovered. Only a few cases of multiple abscesses are reported, and only a small proportion of these recovered. Heiman gives the largest collection of cases reported of brain abscess, including one hundred and eighty-six cerebellar abscesses. Of these, forty were cured by operation, some were not operated, and in ten cases two abscesses were present. Of the one hundred and eighty-six cases, fifty-four were on the right side, eight on the left, and in fifty-two the location was not stated. Reports from St. Thomas Hospital give one hundred cases of cerebellar abscess, operated, followed by death. Neumann, in his book in 1909, gave statistics of one hundred and sixty-three cases. In one the abscess had extended from the right to the left side. Death resulted in spite of two operations. He also cited several cases of multiple cerebellar abscess resulting in death in all but one case. In this case the abscess was on the left side. Milligan reported twenty-seven cases of cerebellar abscess operated. None of these was bilateral. Dench collected one hundred and two cases, and Korner, in his report, collected seventy cases, none bilateral. Dean reports one case of cerebellar abscess—three abscesses opened at three different operations. The patient recovered. He does not state the

*Patient presented before the O. O. and L. Society, Chicago, June 30, 1915.

exact location of the abscesses, whether bilateral or not." On reading this report, I wrote to Dr. Dean, and in his reply he stated that they were all on the same side.

From the above study of the literature we believe, therefore, that this is the first case ever reported of a bilateral cerebellar abscess with recovery.

The history of the case as given to me before the time when I first saw the patient, by Dr. McMillan, of Monmouth, to whom we are indebted for seeing the case, is as follows: It was a case of severe infection beginning in the nose—an acute purulent rhinitis. The young man is eighteen years of age. Previous to this infection he enjoyed good health, with no history of ear trouble or infections of any kind. The trouble began on November 23rd, with what he called a cold in the head. Soon after this he had a middle ear infection, with spontaneous rupture of the right drumhead, and a very profuse discharge of pus from the right ear, which was untreated until the 15th of December. At this time Dr. McMillan was called to see him. Temperature was found to be 98 degrees, pulse 92. There was a small amount of sero-purulent discharge from the right ear. The patient was dizzy, and had a tendency to fall to the right side, which tendency remained throughout the ailment. The pupils were dilated, and did not react to light. Vomiting at times, without apparent cause. Bowels constipated. Treatment: Laxatives, and the ear cleansed morning and evening with boric acid solution. Iodine given internally and silicea three times a day. On the 25th of December the patient manifested what was called by the family paralysis in the right arm and leg. Temperature subnormal—97 degrees—and remained so until he was subsequently brought to Chicago. The pulse began to be slow at this time, going down as low as 54, the range remaining from 54 to 66 from December 25 to January 25, 1915. On January 1st the pulse became even slower and there was chilliness of the limbs. The patient seemed to lie in a sort of stupor, which was to some extent present throughout the illness. On the 2nd of January the patient appeared much improved, as also on the 8th, when the doctor visited him again. The use of the arm and leg was better. Appetite good, except when the patient would vomit at times, without apparent reason. The dizziness had disappeared. He could walk without assistance on this date. On the 13th he was greatly improved.

There was no dizziness. He walked better. The pulse was slow. The temperature was not taken on this date. There was still some stupor. He was slow to answer, but seemed to be improving. On the 23rd there was a marked increase in the stupor; the pulse was still slow; face flushed; pupils dilated; double vision—which was the first notation of any disturbance of vision. There was what the doctor called a slight aphasia on this date. The doctor had the patient try to walk, with sudden collapse, with slight vomiting, followed in thirty minutes by a slight convulsion. Soon after this he again vomited some sour material. He would not eat. Pulse 54; temperature not taken.

I was called to see the patient on January 23rd at 11 p. m. My examination at that time showed the condition about as given above. There was a perfectly clear mentality, but the responses were somewhat delayed because of the patient's low condition of vitality, and some difficulty which he had in speaking. The pupils were widely dilated and rigid. No strabismus. There was a moderate lateral nystagmus on looking to either side, an exaggeration of what might be called a physiological nystagmus, also a vertical nystagmus on looking upward. The patient was unable to stand—would fall somewhat to the right, although this was not pronounced. The examination of sensation—such as I could make at that time—revealed nothing abnormal. There was a slight choked disc in each eye. This was not marked, but perhaps what we would call only a moderate optic neuritis—simply a blurring of the edges of the disc, with some increase in the size of the veins, more marked on the left than on the right side. Hearing was normal. Temperature 97 degrees, and pulse about 60 at the time I saw him first.

I made a tentative diagnosis of right-sided cerebellar abscess, and advised that he be brought to Chicago. This was done, and he arrived here on the morning of the 25th, the second day after my first visit. He made the trip very nicely and was really in apparently better condition on his arrival than when I saw him before. He had better muscular control, his mentality was clear, and he was more prompt in his responses. He had eaten about normally, and while he had to have assistance in walking, he was better able to make an effort than before. I called in consultation at that time Dr. Julius Grinker, of Chicago, who made a very complete neurological examination, and I

will ask him for the report of his examination, which he will give you. We had an examination made of the blood, but the report was not very definite—that is, it did not positively indicate infection. The first report showed a white count of 10,400, with both a relative and absolute lymphocytosis, the interpretation being that there was no evidence of pathogenic infection. This examination was made on January 25th. Dr. Grinker made a spinal puncture and drew off about four or five c. c. of cerebrospinal fluid, which came out under pressure but was normal in appearance. The examination of the cerebrospinal fluid showed fifteen lymphocytes per c. mm.; red blood cells, none; polymorphonuclears, none. Smear showed lymphocytes, 100 per cent.; squamous cells, none; bacteria, none; cultures, no growth. Nonné negative, both number one and number two; Noguchi test for globulins negative.

Inasmuch as there was some doubt as to the diagnosis we decided to wait for a time for further developments. We kept the patient in the hospital for seven days, simply giving expectant treatment and doing nothing surgically. On the seventh day he developed a marked rotary nystagmus to the right side, with an increasing vertigo and slight vomiting. The hearing in the right ear, which had been approximately normal, was distinctly lessened at this time. With this development I reached the conclusion that there was beginning labyrinth trouble. I made a diagnosis of circumscribed serous labyrinthitis. The mastoid had been entirely negative in every way, except a slight darkness on transillumination—no sensitiveness, no swelling. The middle ear had become normal; the drum opening was closed, and there was no pus in the middle ear. On the eighth day I made a mastoid operation, a very complete simple mastoid operation. The mastoid cells were not broken down and there was no pus in the mastoid, but the cells were distinctly darkened and softened, showing that they were infected and had very nearly reached the stage of breaking down. A culture showed the yellow staphylococcus. The labyrinth was exposed but not opened. The dura over the cerebellum in Trautmann's triangle was exposed extensively and was normal in appearance. We lifted the dura over the petrous portion of the temporal bone as far down as the internal auditory meatus, and discovered nothing abnormal. The temporo-sphenoidal lobe was not uncovered, but all of the mastoid cells were cleaned out, making a

very thorough, complete removal of them. This was all that was done at the first operation. We believed that there was trouble in the cerebellum, but, not finding any definite point of extension from the mastoid and reaching the limit of infected tissue at all points, we did not think it advisable to make any further operation at that time.

The immediate results of this mastoid operation were somewhat surprisingly good. The discharge of serum in the first three or four days after operation was very great. The symptoms were all ameliorated. The temperature, which had gone somewhat above normal, came back to normal. The rotary nystagmus, which had been pronounced, disappeared in forty-eight hours. The patient had no more vertigo. He was able to sit up and eat. There was no vomiting. There was marked lessening of the dilatation of the pupils. I want you to note these points particularly, that following only a mastoid operation, with removal of the focus in the mastoid cells, this improvement took place. The patient was so much better that he was able to stand up out of bed on the fourth day. On the fifth and sixth days he continued to improve, but on the evening of the seventh day the pupillary dilatation began again, but there was no return of the rotary nystagmus. The temperature did not go up. There was only this dilatation of the pupils. On the seventh day there was a distinct recurrence of the cerebellar symptoms (I mean by that interference with muscular co-ordination), and the patient vomited again, and had recurrent vomiting on the eighth day after the mastoid operation. We therefore determined to explore the brain, and on the ninth day following the mastoid operation we made another operation.

Now, one thing I want you to notice, and which Dr. Grinker will speak of in detail later, is that this patient, while he had what seemed to be unmistakable signs of right-sided cerebellar trouble, had some symptoms that could not be explained by such a lesion. Dr. Grinker will tell you just what those symptoms were.

We therefore decided to reopen the mastoid wound and explore, but on account of these symptoms we uncovered and explored the right temporo-sphenoidal lobe. This was extensively explored but found to be normal. Examining, then, over the anterior portion of the cerebellum, as we had before, and finding no evidence of infection there, we went back of the sinus and trephined over the cerebellum, an inch and a half back of the external auditory meatus and below

the level of the lateral sinus. We uncovered the cerebellum at this point and there opened a large cerebellar abscess. Later I will say something about the reason for doing the operation in this particular way. Some of our friends tell us that it is not the latest fashion to open cerebellar abscesses at this point, but remember that we had exposed the original area of infection, removed it, and reached the limit of infected tissue in all directions. The dura over the anterior part of the cerebellum was normal in appearance. There was no direct extension of the infection from the mastoid abscess, nor was there any labyrinthine disease. Bear in mind the difference between this and the more common cerebellar abscesses which come from infection through the labyrinth in chronic cases, in which you have a distinct suppurative labyrinthitis. This patient did not have a labyrinth infection; he did not have an extension from the mastoid cells into the brain direct. It was a metastatic abscess, formed in the cerebellum, very large in extent, and we uncovered back of the sigmoid sinus and released a very large abscess. We could hardly believe that so much pus could be in one hemisphere alone, and later we found that it was not.

Our subsequent handling of the case and our drainage were greatly facilitated by the fact that we had gone directly in at this point instead of going through the triangle into the anterior portion, as is most commonly done, and as is the best thing to do in cases of direct extension.

Of course there was immediate amelioration of the symptoms, and the case pursued the usual uneventful course of recovery for about seven weeks. Then the abscess had sufficiently closed in, the space was small enough to allow the patient to be up and out of bed. He was eating normally, had a normal temperature most of the time, but at intervals of three or four days would show a slight rise, up to 100 degrees or 105.5 degrees, which would subside spontaneously to about normal. He was allowed to leave the hospital. The right-sided abscess was nearly closed, with only a small drain, seven or eight weeks after operation.

After having been five or six days out of the hospital and doing apparently well, he suddenly grew worse. The temperature, which had been about normal, went from 99 degrees to 104 degrees in six or seven hours. The pupillary dilatation returned; the patient became

semi-comatose, unresponsive to questions, and presented all the symptoms of the former condition again. We took him back to the hospital, redilated the canal of the old abscess, going very deeply into it through a canal four inches long, in the bottom of which a considerable amount of necrotic material was found. I then remembered a suggestion which Dr. Mackenzie had made many weeks before, and



Figure 1

which I should have carried out earlier, and took an X-ray picture of it. We had not taken this before because we did not have the suitable apparatus within reach. We had a portable apparatus brought to the hospital. We put a large probe into the abscess cavity, all the way to the bottom, and took the X-ray pictures with this probe in position. When these pictures were developed, the plates of which



Figure 2

I have here, we had an explanation for a great many things that had been somewhat confusing. We found the abscess extended all the way across into the left cerebellar hemisphere and we had a bilateral cerebellar abscess, which had undoubtedly existed all the time. This explained why the trouble had recurred, even after he seemed well, when we were trying to allow the right-sided abscess to close. It explained what had confused Dr. Grinker in the symptoms, which could not be explained by a one-sided lesion. It explained the left-sided trouble all the time and a great many other difficulties.

Recognizing that we had to drain a left-sided abscess through the right side or make another opening on the other side, I had a silver tube made, seven-sixteenths-inch in diameter, with a flange to keep it from going through. The original tube was three and three-



Fig. 3.

fourths inches long. I cut the tubes off subsequently as I allowed the cavity to become smaller. These tubes were taken out each day and the abscess cleaned. We drained it for about four weeks. Then I took the silver tube out and put in rubber tubes, smaller in size, and cut off the rubber tubes as we needed to lessen the depth of drainage. That is the way the case has been treated up to the last three or four weeks, when there has been nothing but a little external dressing, and that has been removed.

Of course there have been a great many interesting problems arising in the course of this case, which there is not now time to describe.

One interesting thing is that this entire operation, the exploration of the temporo-sphenoidal lobe, then carrying the incision backward and uncovering the cerebellar abscess, was made without any anaesthetic. The patient was conscious, would respond to questions, and suffered very little pain. He was given 1/6 grain of morphia half an hour before operation. Of course, a patient with any brain abscess has a sensorium more or less affected, and is not particularly acute to sensation. Perhaps this is particularly true of cerebellar abscess. However, it is possible, even with a patient who is alert, to perform

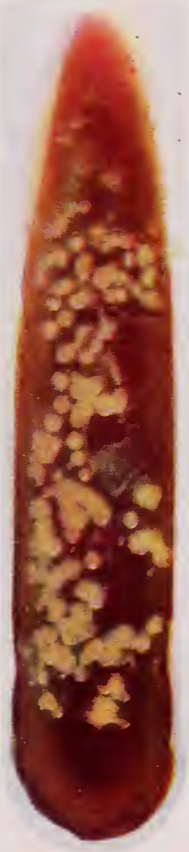


Fig. 4.

an operation of this kind without it being especially painful.

The culture made from the abscess showed a pure culture of the staphylococcus pyogenes aureus, the same infection as that in the mastoid, although there was no direct connection between the two.

DISCUSSION

Dr. Dean W. Meyers: There is hardly anything left for me to say upon the eye symptoms of this case after the able presentation you have heard. There are, however, a few points that might well be reviewed for the sake of emphasis.

First. With regard to the optic neuritis, a condition which of course may occur and does occur frequently in any involvement of the brain. Optic neuritis is not always present in cerebellar abscess. However, it is of interest when it does appear. Probably in this case the choked discs merely evidenced intracranial pressure. As you noted, the first mastoid operation resulted in some improvement of all of the eye symptoms, including the optic neuritis. This is difficult to explain unless we attribute the temporary relief to the decompression that resulted from the mastoid operation and the exploration of the intracranial cavity. Of course that decompression was very slight, but we must remember also that the optic neuritis was slight, and so it is possible that the reduction of pressure that came from that first operation gave some relief. This theory is given some support when we recall the enormous amount of serum that escaped from the mastoid wound.

The nystagmus in this case was interesting. The patient presented in the first few weeks of the condition very little nystagmus of any sort, a slight exaggeration of what might be spoken of as a normal horizontal nystagmus, but nevertheless a nystagmus that pointed to cerebellar disturbance. Then later, after entering the hospital, there came a sudden development of marked rotary nystagmus, the distinct type of labyrinthine involvement. The prompt relief of that condition following the mastoid operation, although the labyrinth was not opened, would point strongly to an acute serous labyrinthitis. Probably the bleeding and the serous exudations resulting from this operation brought about a reduction of the congestion resulting in the disappearance of the labyrinthine nystagmus. All of these conditions point

very definitely to the fact that the labyrinth was not infected. There was a congestive labyrinthitis, not a suppurative labyrinthitis. This rules out the labyrinth as the pathway of this infection to the cerebellum. The action of the pupils was also of interest. Their dilatation and the improvement following the mastoid operation could probably also be explained by the reduced pressure resulting from the slight decompression. Transient diplopia also preceded this first operation and disappeared entirely after it. This was so slight that an actual strabismus was never observed.

This case emphasizes the fact that the ophthalmologist, rhinologist and otologist should know more about the brain. I believe we have been confining ourselves to treating eyes, ears and noses, and have not been giving enough attention to graver conditions. Many times we have probably overlooked valuable points. This truth comes emphatically home to me. I had the pleasure of suggesting a cerebellar abscess in this case after hearing the description, but my suggestion resulted from the fact that I had had the opportunity of making a very fine post-mortem diagnosis in such a case in my own experience. My case had all these eye symptoms exaggerated, and probably all of the general symptoms. I discussed it with some good men but we did not correctly diagnose and did not operate correctly, and the patient died. Of course, that is not an unusual experience. I believe, however, that if we knew more about these conditions and were more alert to the possibilities we would probably save more of our cases. Certainly Dr. Haseltine is entitled to great credit for his careful handling of this unusual case.

Dr. George Mackenzie: The proof of the pudding is in the eating. The mere fact that we have the patient alive and with us is evidence that the doctor operated successfully. Neither he nor his associates have any apology to make. The case, so far as I know, is the only one of its kind on record with recovery. We can spend our time more profitably in analyzing this single case than in listening to a half-hour report of forty or fifty cases cured with some form of electro-therapeutics. Several features strike me about this case, particularly in reference to the nystagmus.

First, Dr. Haseltine tells us that the patient had a horizontal nystagmus to both sides on looking to the sides, and he suggested, too, that it was an exaggerated physiological nystagmus. Now, to my

mind, this nystagmus was of a cerebellar origin. I will later tell you why.

Dr. Haseltine: He also had a vertical nystagmus. I neglected to mention the vertical nystagmus. That is, he had this vertical nystagmus on looking up.

Dr. Mackenzie: Vertical nystagmus on looking up might be caused by insufficiency of one of the elevators of the eye, and it is a factor to be reckoned with in this case, for a casual look at the patient shows an evident ocular imbalance.

As it was proved eventually, the patient had a cerebellar involvement of both sides, so that he could consistently have a horizontal, wide-excursion nystagmus to the two sides, in differentiation from the rotary or mixed rotary and horizontal nystagmus found in the case of vestibular disease. This differentiation was first pointed out by Alexander about ten years ago; namely, that cerebellar disease shows a horizontal nystagmus of wide excursion, while labyrinthine nystagmus or eighth-nerve nystagmus is distinctly rotary or mixed rotary and horizontal. I had occasion quite recently to corroborate this finding rather accidentally. Later Dr. Haseltine's patient developed a rotary nystagmus to the same side, which Dr. Haseltine had acquainted me with some time ago, and I think we both agreed that it was probably a circumscribed irritative labyrinthitis of that side; but since listening to the paper today I am inclined to change my views, for, if we will recall it, Dr. Haseltine told us that immediately after the mastoid operation, at which time he bared the posterior fossa along the anterior portion of the cerebellum, the patient's pupils diminished in size, whereas they had been formerly dilated and more or less inactive; too, that the patient's nystagmus improved. I am inclined to believe that the decompression effected relief of sufficient pressure in the posterior fossa and consequently the irritation from the pressure that existed in the region of the eighth-nerve had been relieved, and with it the nystagmus. The only way to prove it would have been to examine the patient beforehand and afterward with turning, galvanism, etc. This Dr. Haseltine did not do before operation for very valid reasons; namely, that in the event of abscess had he whirled the patient considerably there was some possibility of spreading the infection or purulent material into one of the ventricles or surface meninges and thereby precipitating a meningitis. I am forced

to believe that the horizontal nystagmus to the two sides was really cerebellar, and that the rotary nystagmus to the same side was the effect of pressure in the region of the vestibular nerve.

In talking with Marburg several years ago about this subject, he inclined to the belief that nystagmus from diseases about the cerebello-pontine angle was due to pressure on the eighth nerve. I am inclined rather to accept the suggestion of Alexander; *i. e.*, that eighth nerve lesions cause rotary nystagmus of relatively short excursions, while cerebellar disease produces a horizontal nystagmus of relatively long excursions.

The diagnosis of abscess of the brain is attended with considerably more difficulty than one would imagine from reading the text-books. I pride myself on being a careful diagnostician; I get more pleasure from diagnosing than from operating. I was called recently by a very capable man, Dr. Sears, of Huntington, Pa., who had diagnosed a case of labyrinthine suppuration. I corroborated his diagnosis and operated. The patient at the time presented the symptoms of labyrinth disease plus some other symptoms, including headache, slow pulse, slow cerebration. Immediately after the labyrinth operation and more or less exposure of the posterior and middle fossae for the purpose of inspection, the patient improved generally, and with this improvement the temperature went up a few degrees. This I have found frequently after decompression operations in cases of abscess—which may be a differential diagnostic point from tumor. Do not confuse this rise of temperature with that resulting from reaction, for it occurs within fifteen or twenty minutes after operation and is a favorable sign. In my case I thought everything was doing nicely. However, in the course of several days Dr. Sears wrote me that the patient's symptoms had recurred; the pupils were again dilated, more particularly on the affected side, and the choking of the disc had not diminished, as we had hoped. The patient had vomited and also developed some paralysis on the opposite side. We made a spinal puncture and found it negative, excepting for an increase in lymphocytes. The spinal fluid in case of unruptured abscess of the brain is generally negative. There is no bacteria. Notwithstanding this negative puncture we decided to open the wound and look. Because of the internal ear symptoms we were somewhat misled in this case. Although we felt sure there was an abscess, we were

unable to decide whether it was in the cerebellum or the temporo-sphenoidal lobe. We punctured the cerebellum first and got nothing. Then we made an incision into the middle fossa and at first got nothing. I made a crucial incision and the pus came—first a drop and then a little more—very slowly, but not with a gush. I cite this case to show you that even though I may pride myself on diagnosis I fell down in this case, for I had suspected the cerebellum rather than the temporo-sphenoidal lobe. I cite it also for the purpose of referring to the subject of nystagmus. This patient had a nystagmus before operation on looking straight ahead to the unaffected (left) side of very slight degree. After I punctured or incised the cerebellum on the right side and the patient returned to consciousness he manifested a distinctly wide-excursioned horizontal nystagmus to the same side, which makes me believe that the horizontal nystagmus to the same side speaks for a cerebellar condition produced by the incision into the cerebellum.

It is easy to make a mistake in spite of our apparent knowledge of the subject of localization of abscesses; however, there are certain symptoms which are present in all abscesses which Dr. Grinker has already referred to. In abscesses of the brain the reasons for our difficulties are apparent when we consider that in abscess of the brain we have four distinct stages; namely, (a) the stage of onset or initial stage, (b) the more or less long-drawn-out dormant or latent stage, (c) the manifest stage, and (d) the quick terminal stage.

Next, in abscesses of the brain we may have symptoms referred to the location of the lesions (focal) and these again may be divided into two types, the irritative, as this patient showed in the case of the vestibular nerve, and the destructive, which are opposites, and particularly is this so when you come to study the nystagmus when it becomes confusing at times. Then we have what we call the distal symptoms, to which Dr. Grinker referred when he spoke of McEwen and his work on the brain. For instance: It is possible to have a lesion on the right side of the cerebellum and the pressure jamming against the medulla on the left side, pushing it against the foramen magnum, when you get symptoms referable to this location. If higher up you get the uncrossed pyramidal tract and if lower down the crossed pyramidal tract. So you can have a hemiplegia on one or the other side of the body.

You may have constitutional symptoms from toxemia. Last, but not least, you generally find pressure symptoms. We may also have symptoms from complicating disease. In regard to the otitic intracranial complications, Politzer pointed out that they very rarely occur singly; so that you may have, for instance, as in the case I spoke of a few minutes ago, an internal ear affection along with a brain abscess, or you may have brain abscess associated with sinus thrombosis, etc. With brain abscess we sooner or later get complication from the meninges, which usually accompanies the terminal stage. In sinus thrombosis we may have extension of the sinus phlebitis directly inward and backward with resulting complication in the brain substance.

Thus you will see that we have numerous things in our way in studying a case to determine just what the complication is when it is a single one or what they are when they are multiple—and their locations.

The size of the lesions does not determine the magnitude of the symptoms in all cases. For instance, here we have a case in which no doubt the patient had an encephalitis to begin with of milder type before actual breaking down of the tissues occurred over a large area, and yet outside of the fact that the patient was slightly somnolent with slow cerebration, pupils somewhat dilated, and so forth, he had only symptoms that would suggest increase of intracranial pressure.

Recently I had occasion to study carefully a case which turned out to be a cysticercus of the auditory canal. He had been sick for several years. He had lived among hunting dogs and had slept in a barn with them. Evidently one of these dogs had a tape-worm. The patient was a very sick man. He had involvement of the eighth nerve on the affected side; a little later the facial became involved. This patient had a very pronounced choked disc and had it very early, at least a month before operation. He had pronounced symptoms of pressure, all produced by a cyst that was no larger than a walnut. We generally suppose that a small lesion coming suddenly will produce terrific symptoms, while a slowly-growing abscess will produce but moderate symptoms. A comparison of these two cases seems to contradict the rule.

Dr. George M. Suffa: One point in regard to diagnosis; namely, the importance of incoördination as a means of localization. That

was not dwelt upon, if mentioned at all, as I heard the discussions and the paper.

Dr. Haseltine: You mean ocular incoördination or muscular incoördination?

Dr. Suffa: I mean incoördination so far as locomotion goes.

Dr. W. H. Phillips: I want to ask two or three questions. First, what relation the purulent rhinitis bore to the cerebellar abscess? Did it have any other direct relation than its possible connection with the ear affection? Secondly, I should like to know why the temporo-sphenoidal lobe was opened in the presence of this history in place of the cerebellum? Dr. Grinker, I think, started to discuss it in stating that irritation of the corpora quadrigemina might produce the nystagmus. That is something a little new to me, and I should like to have him explain it. Also, I should like a little more light on the question of the reflexes in cerebellar abscess. As a rule, we know that they are diminished. It would appear to me that pressure on the pyramidal tracts ought rather to increase them. Lastly, is lumbar puncture in these cases of cerebellar abscesses of considerable size at all dangerous? I happen to know of one or two cases—one especially—where in the presence of a large cerebellar abscess, as proved by post-mortem, the patient died very suddenly following a lumbar puncture, nothing more being done.

Dr. J. A. Campbell: This is a remarkable, epoch-making case, and leaves little for discussion. The result crowns the work. I have been extremely interested in this branch of cases for a great many years. Possibly you will remember that in the April-May number of the Journal I reported two cases of brain tumor. I was glad to hear today that there was difficulty in making a positive diagnosis between cerebellar tumor and cerebellar abscess. My surprise is that there were not more reflex eye symptoms. That is astonishing. After all, many of the symptoms which you see in this and every other case are symptoms due to pressure. For instance, in one of my cases after a decompression operation was made the pupils contracted, and everything seemed better. This was due simply to the relief of pressure.

Another point—I am glad it was stated that the size of the tumor makes comparatively little difference in the symptoms. I have seen some very celebrated men make some very celebrated blunders in

cerebral diagnosis because it is so mixed up with many different things. The probability is that the eye and ear men should know more about the brain. This seems to me an admirable suggestion.

I remember when I commenced practice, I studied Charcot and Ferrier, and it helped me wonderfully.

The study of this case has been so remarkably brilliant that I think we should congratulate Dr. Haseltine and everybody associated with him. He has felt his way along from point to point, until it was an elaborate success. The only question in my mind now is whether it was connected with the ear or not. You will remember that one of the cases I reported of brain tumor which had been diagnosed by five in consultation as otic was not otic at all. The tumor was on the other side of the brain, and post-mortem showed that there was not the slightest indication of inflammation in the vicinity of the mastoid, petrous portion of the temporal bone, or surrounding it. Therefore I think it is certainly possible that we may have a concomitant condition. This case probably did not have much to do with the ear, although the foci of inflammation may start from different parts of the body, as a tooth, the nose, the ear, or any other part of the body, and have very little other symptoms.

My wish is not to offer any great information on the subject, because that has been exhausted, but simply to congratulate Dr. Haseltine.

I have seen it authoritatively stated that in tumor of the brain a spinal puncture is contraindicated. I would like to have this point taken up in the closing remarks.

Dr. Maxwell: Many of these cerebral conditions are very difficult of diagnosis. I had one in my own family recently, of traumatic origin, in which the diagnosis was beset with difficulties. Dr. Denman is familiar with this case.

Dr. Julius Grinker: Dr. Haseltine deserves great credit for this work. I consider it a distinction and a privilege to have been of assistance, and almost constantly by his side when he was doing this wonderful operation. I congratulate him on the success he has had; others have tried similar operations and failed. The failures were not altogether due to unskilled workmanship. Sometimes a patient who was doing well after such an operation would develop some unfortunate complication and defeat the operator's purpose.

This case is a rare one indeed.

I understand Dr. Haseltine has entrusted me with the neurologic discussion. As a matter of fact, he gave you all the neurology of the case. There is but little for me to add. However, I shall attempt to bring out certain differential points and difficulties in the diagnosis. Not being a surgeon I am not competent to talk on the treatment of brain abscesses further than to state that every such case belongs to the surgeon.

The diagnosis of cerebellar abscess is beset with many difficulties. It is not as smooth sailing as would appear from a perusal of the text-books. Dr. Haseltine diagnosed cerebellar abscess before I saw the case; and after a short examination I made the same diagnosis independently of him. But when the subject of an operation was discussed, when the question came up of actually proving the diagnosis of cerebellar abscess, Dr. Haseltine and I decided to make our positions impregnable. And that explains in part why some of the various steps were taken before the cerebellum was finally entered. As a matter of fact, the diagnosis of cerebellar abscess, though often made, cannot always be verified by operation or on post-mortem examination. Many of the cases in the literature to which Dr. Haseltine referred had not been diagnosed before operation. Some of these had been diagnosed after an operation had been performed in another part of the brain, and the operators finally groped their way to the cerebellum. In other words, the diagnosis of cerebellar abscess is not often verified on the operating table, and it behooved us therefore to be rather conservative.

What were the symptoms in this case? Headache; occasional vomiting; occasional chills; extreme apathy; indifference; a lassitude not normal to the patient; dizziness; subnormal temperature at times, with slight rises at other times; ataxia and choked discs. Are these symptoms characteristic of cerebellar abscess? I think not. Had it not been for the history of a purulent otitis and rhinitis, we should have been compelled to think of conditions other than cerebellar abscess, although the latter would have been one of the diagnostic possibilities. We have no right to diagnose abscess of the brain unless there is a history or evidence of infection in the neighborhood of the cerebrum, usually the ear, nose or the nasal sinuses. Of all the brain abscesses that have been diagnosed, operated or verified post-mortem, one-half

were caused by ear trouble; the other half by either trauma from the vicinity or from abscess elsewhere, such as the lungs, pleura, or a suppurating mass anywhere in the body. Metastatic abscesses are always the result of purulent foci in some part of the body. We may conveniently call this a metastatic abscess, but it really belongs to the otitic abscesses that occur in the cerebellum or temporal lobe. True metastatic abscesses usually come from remote depots of infection, such as the lungs, pleura or suppurating bone.

To return to our otitic abscess. It was our duty to explore the primary seat or the region most likely to be the primary origin of the abscess—the tympanum, antrum, labyrinth, or the mastoid. In cerebellar abscess the most important of these depots of infection is in the mastoid. It is a fact that abscesses do not develop far from the site of original trouble. Most of the abscesses of the brain or cerebellum have occurred on the side of the affected ear, although I saw a case not long ago in which a purulent otitis followed by mastoid disease caused an abscess, not where it was expected in the temporal lobe or cerebellum of the same side, but in the frontal lobe on the opposite side. While the rule holds good that the abscess is on the side of the ear trouble it is not without exception.

Dr. Haseltine told you about certain symptoms that were puzzling. Perhaps he might have better said that they were not so easy to explain by a unilateral cerebellar abscess. One of the symptoms was an increase in the deep reflexes of the right side, the side suspected of abscess. Increased reflexes on the same side as a cerebellar lesion are exceptional. McEwen long ago found that on the side of a cerebellar lesion, tumor or abscess, reduction or loss of the reflexes is not uncommon. I have seen cases of cerebello-pontine angle tumors with total loss of the reflexes on the side of the lesion. Exaggeration of the reflexes on the side on which we suspected the cerebellar abscess was therefore something that did not accord with the usual symptomatology. It appeared there must have been something on the opposite side in the region of the uncrossed motor tracts capable of compressing these tracts, thus giving exaggerated reflexes on the right side.

A point which Dr. Haseltine did not mention, or at least I did not hear him do so, was that there was a history of jerkings—jactitations. The boy's attending physician was positive that these twitchings

were localized on the right side. This, too, did not agree with cerebellar abscess or tumor, for twitchings, if present at all, are not confined to one side. Of course, we now know that since the abscess was found on the opposite side also, the uncrossed pyramidal tracts had there been irritated and pressed on by the abscess, thus causing motor symptoms of irritation. Everything is now cleared up, but it was not so before the abscess was found also on the left side.

What must we do in every such case? Exactly what Dr. Haseltine did; namely, clean out first the depot from which the abscess most likely originated, the mastoid cells. Whether you find pus or not, it is necessary to make sure that everything is clean before you proceed. Why was the temporal lobe uncovered and probed? Because in looking over the statistics and in studying the symptomatology of cerebellar abscess one finds that a tumor deeply situated in the temporal lobe may so press upon the cerebellum and upon parts above and in front as to confuse the entire picture, and give signs both of cerebral and cerebellar disease. In our case there was a mere suspicion of trouble in the temporal lobe.

Dr. Haseltine did what every otologist should do; namely, he explored the dura mater, because cerebellar abscesses may originate from an extradural abscess in the proximity of the mastoid. Dr. Haseltine uncovered it, saw it was clean—there being no inflammation, no pachymeningitis—then he probed a little here and there and was certain that he had not omitted a depot of pus, capable of spoiling all his labors. He need not feel that he was rather slow; to have proceeded faster would have been hazardous. Nobody can feel certain that he is doing radical work if he omits all the interesting territory between a suppurating ear and what appears to be a cerebellar abscess. Having ascertained that there was nothing left in the intervening area it was time to enter the suspicious cerebellum. Which part of the cerebellum? Statistics inform us that cerebellar abscesses occur mostly at the lower and external part of the cerebellar hemisphere, because of the contiguity to the infected area. In our case, however, the abscess was not external, but approached the median line and went clear across, affecting the opposite hemisphere as well.

I believe this is a record-breaking case from the point of view of recovery of an abscess so extensive—an abscess that had its location in two hemispheres, and was treated and drained through one

opening, causing as little mutilation of the cerebellum as in this case. No doubt some of you have seen the patient walk down the aisle, with cane in hand and appearing somewhat unsteady, and thought that he presented a case far from cured. The patient is fortunate to have so little trouble remaining. No doubt in time the opposite side will compensate for the lost tissue. But if we bear in mind that the abscess has destroyed cerebellar tissue and that nerve tissue once dstroyed is rarely restored, we can understand his present disabilities. Parts of the normal cerebellum will have to do the work for those which have suffered from the disease. I think the outcome of the case is most fortunate; I know of no similar recovery in an identical case. I must repeat that from the neurologic point of view the diagnosis of cerebellar abscess is extremely difficult, even in a case with such classical signs as this boy had—nystagmus, leucocytosis, slow pulse and extreme apathy. The last-named symptom did not attract my attention sufficiently for the purpose of theorizing as to the extent of the abscess. If it had I should not have had some of the doubts which I mentioned. The profound apathy which made it possible to dispense with the use of an anaesthetic during the operating should have led me to assume the existence of a large abscess, though a dull sensorium constitutes only one of the symptoms of brain abscess.

In this case, then, we had practically everything for a diagnosis, yet many another case has been operated on and no abscess found. What were some of the findings? I may mention, first, circumscribed serous meningitis which has produced similar symptoms, such as nystagmus, ataxia and the after well-known cerebellar symptoms. Again, there may be a ventricular effusion affecting principally the posterior portions of the ventricular system. We avoided pitfalls by making a lumbar puncture. The fluid yielded negative findings. No brain or cord operation should be undertaken unless the spinal fluid has been previously tested for specific disease. Except in the presence of good reasons for not making a lumbar puncture it is an oversight not to make it.

With reference to the dangers of lumbar puncture in cases of brain tumor, there is a real danger from lumbar puncture and this should not be done as a routine practice. The danger, however, is not great when one uses the proper technic. I have had a lumbar

puncture made in a case of tumor in the posterior fossa for the excruciating headache. The patient lived in comfort four years after the puncture. This lumbar puncture was done with patient in Trendelenburg position, head low, and only a few c. c. removed. Done according to these precautions I cannot see why there should be a sudden dropping down of the medulla into the foramen magnum, killing the patient. I have known of deaths resulting from the procedure, but in every such case the puncture was made without extra precautions. In Dr. Haseltine's patient I made the puncture myself. The examination of the fluid ruled out a hydrocephalus and also a purulent meningitis, which may have given the symptoms as described. In case of hydrocephalus there is an increase of pressure, and in purulent meningitis one usually finds pus in the spinal fluid. In our case the spinal fluid was clear, which is the rule, except when the abscess breaks through into the ventricles.

Why did I advise entering the temporo-sphenoidal lobe? Because a large tumor in the temporo-sphenoidal lobe may so press on the copora quadrigemina and the superior peduncles of the brain in its proximity that one may have nystagmus and after-cerebellar symptoms, and in addition pressure symptoms from the pyramidal tracts—symptoms which we had in this case. And we also had jactitations, muscular twitchings confined to the right side. If they occur at all they are usually not found localized. Besides, an exploration of the dura is always indicated in purulent cases. There are extradural abscesses, near the mastoid, which eventually by contiguity may be converted into deep cerebral or cerebellar abscesses. Is ataxia a localizing sign in cerebellar disease? No. Ataxia can be produced by interference with the fronto-pontine cerebellar tract, which has its origin in the frontal lobe, and many a case of frontal lobe tumor, or abscess has been mistaken for a cerebellar lesion because of the ataxia. While ataxia is of immense value as indicating interference with some portion of the cerebellar mechanism, it is not a localizing sign.

Dr. Haseltine: I cannot tell you how greatly I appreciate the generous expressions of the gentlemen who have discussed this case. For the fortunate result the credit should not be given to any one alone, but to alertness and intelligent co-operation upon the part of all, including physicians, nurses and parents. Dr. Grinker's advice

has been invaluable, not only in the matter of diagnosis, but in the subsequent care which has several times presented problems of the greatest difficulty. I have had his help in several brain abscess cases, but in none where it has been more vital.

Physical therapeutics. The medical schools of the country are giving but the most superficial attention to physical therapeutics. To their credit the homoeopathic schools have been more advanced in giving place to this department of medicine than the regular school of medicine.—*Journal of Advanced Therapeutics*, April, 1915.

The alleged sharpness of savage eyes, although superior to that of the normal European, is not so to any marked degree; there is not that superiority in visual acuity proper which the accounts of travelers might have led one to expect. The superiority of the savage's sight is a question of attention and practice in the interpretation of minute indications.

PERNICIOUS ANAEMIA

J. A. Ferree, M. D.,
Columbus, Ohio.

IN the recital of this case an attempt will be made to give enough data to assure the diagnosis of pernicious anaemia Beyond this we care little, since our interest is in the ocular phenomena as manifested in the case. The examinations were not made under the most favorable conditions. The patient had reached the place in the progress of the disease which compelled his being in bed all the time, and his lack of interest at times may have detracted from the certainty which is desirable in this work. Then, again, the details of the examination were necessarily hampered by his lack of endurance. He tired easily and no doubt the enthusiasm of the examinor and the examinee were not of the same degree. We may have carried the seances beyond the point of certainty. If so, please remember that his lease of life or the length of time in which he could enter into and carry out his part of the program in the examination seemed not too long. The room in which he lay was 14 by 12 feet, fairly well lighted. The visual acuity was taken under natural light illumination and the color test was done under artificial light (electric) with as much care as was possible.

Mr. L., aet. 51; occupation, store manager for the Pittsburgh and Monongahela Coal Co. for twenty-five years, or until nine years ago, when he engaged in real estate business, selling Florida land, making trips to that state frequently. His family history is as follows: Father died at the age of 77 from apoplexy; mother at 79, suddenly, the cause not ascertainable; two brothers dead, from rheumatism and smallpox; two brothers and three sisters alive and well, with the exception that one sister has had some "stomach" difficulty since 1909.

Mr. L. had been perfectly well until twenty months ago, when he developed a "sore mouth," the mucous membrane "beef-steak" in color. Accompanying this were variable stomach symptoms. September 9th of this year (1914) he began treatment with one of the Columbus homoeopaths, with an amelioration of his condition, so

much so that in two weeks he went back home and resumed his usual work. He was able to continue it for one month; then a return of the same trend of symptoms. After a short period of treatment by the same physician, with very little relief, he was sent into the hospital under the care of Dr. Grosvenor, who very generously submits the following findings: Blood pressure, recumbent position, 100; hemoglobin, scale 30; number of red cells, 1,530,000; number of white cells, 5,500; color, index 1; pathological red cells, megaloblasts, normoblasts, poikilocytes, polychromatophiles, anisocytosis; pathological white cells, few myelocytes.

Differential count:

Polymorphonuclear	70%
Small lymphocytes	23%
Large lymphocytes	6%
Myelocytes	1%

Urinalysis: Amber color; acid reaction; specific gravity, 1015; indican present; phosphates present; urea 23 gms. per liter.

Skiagram revealed gastroptosis and appendicular adhesions involving the head of the caecum.

The ocular findings did not vary enough to warrant a detailed recital of them separately, so unless mention is made the description will be taken as to include both. The lids were puffy, especially the upper. The episclera presented only two blood-vessels in each the upper and lower quadrant markedly tortuous; one branch extending to the limbus. The general color of the globes was a bluish-pearly cast. The aqueous humor and lens presented nothing abnormal. Let me say the anterior chambers were shallow, unnaturally so. The irises presented no abnormality in color, with the possible exception of a lighter shade of blue in areas where one would less expect to find it. They responded to all the pupil-reflexes, contraction and dilatation reflexes, were equally susceptible to the cycloplegic and the pupils were uniform in diameter before, during and after dilatation.

The disc was oblong in the 75 meridian in O. D., and 105 in O. S. The neuro-retinal margin was hazy and the disc proper had an unaue proportion of smaller blood vessels therein. The retina had numerous hemorrhagic areas of different shapes and sizes. The greater number and size appeared on and near the 180 meridian, also near the discs

The shapes of the hemorrhagic areas were without exception round and oblong. The round areas appeared between the main retinal vessels; were of the appearance, somewhat, of granulation tissue. Some of them had a white center, others were solidly red. The oblong areas appeared in the course of the blood vessels, preferably the veins, with the larger part below the vessel. These, as mentioned before, occurred along the vessels traversing on and near the 180 meridian. The vessels were very much under size. The veins were fuller than the arteries, this, particularly in the lower quadrant.

As said before, the visual field was taken under adverse conditions. There were no scotomas, no contraction of the visual field for white, blue, red or green ascertainable. The visual acuity for the right eye was 13/100, for the left eye, 13/50. In the course of the treatment he had two injections of neo-salvarsan, ½ size dosage, intra-venously. The first was given April 28, 1915; the second three weeks later.

Ohio State University.

THE EYE FROM A NEUROLOGICAL STANDPOINT.

J. Richey Horner, M. D.,
Cleveland, Ohio.

THE eye, either anatomically or physiologically, is a factor in very many of the diseases of the nervous system, extra- or intra-cranial. Its intimate anatomical relation with the cerebrum and cerebellum makes necessary a consideration of its normal functions so that any deviation may be interpreted rightly. We must consider not only the eye itself, but its appendages as well. Diplopia, hemianopsia, choked disc, amblyopia and changes in the field of vision are most important indications of disease involving the nervous system. The presence of hemianopsia with or without Wernicke's pupillary light reflex may lead to the discovery and location of a hitherto unsuspected brain tumor. As a matter of fact no diagnostician, and we ought all to be diagnosticians, can afford to be without a working knowledge of the eye and its appendages and the most approved methods for their careful examination.

Perhaps the best, and at the same time the most available instrument for this purpose is the ophthalmoscope. Perhaps all of the readers of the Journal do not know the history of this little instrument. It dates back to 1851, credit for the same being given to both Helmholz and Cumming. It was the direct outcome of investigations which had been carried on for years, in fact ever since Mery in 1704 saw the retinal vessels of the eye of a cat under water. Since the general use of the ophthalmoscope became possible the progress of ophthalmology has been very rapid. One of the very first results was the recognition of diseases of the retina and optic nerve and this very naturally led to investigations of the relations which diseases of the brain might bear to the organ of vision.

Choked disc and papillitis or optic neuritis are forerunners of blindness through atrophy of the optic nerve. The cause is a mechanical obstruction of the sheath of Schwalbe, an obstructed flow of the cerebro-spinal fluid or possibly an irritant in the fluid distending the sheath. While the clouding of the disc may be quite advanced and not interfere greatly with vision, still the ultimate result will

certainly be an atrophy of the nerve unless the pressure is relieved. It occurs in ninety per cent. of cases of increased intracranial pressure from any cause, and is strongly confirmative of the presence of a tumor. A diagnosis of this latter condition may be made positively if we have projectile vomiting, persistent headache and choked disc. Other causes contributing to choked disc may be a brain abscess, hemorrhage, meningitis, aneurism and syphilis of the brain. It is quite the correct procedure to make a decompression operation for the relief of the pressure.

We must, however, recognize the fact that choked disc may be due to extra-cranial conditions of the nervous system and to conditions which do not have disturbances of the nervous system as an etiological factor. Of the former, most notable examples are multiple sclerosis and disease of the orbit; of the latter, chlorosis, menstrual suppression and nephritis.

Ophthalmoplegia may occur as a result of a mid-brain lesion. If the third nerve is affected, the paralysis on the same side as the lesion causes ptosis, dilatation of the pupil and a diversion of the eye outward and slightly downward. Pressure on the fourth nerve causes impaired downward movement of the eye with a slight movement inward. Paralysis of outward movement is caused by pressure on the sixth nerve and the eye turns inward, causing diplopia. Pressure on the cervical sympathetic results in a retraction of the eyeball with a narrowing of the palpebral fissure and a contraction of the pupil.

It is not infrequently the case that the neurologist meets psychoses due to eyestrain. The writer has upon more than one occasion cured depression, and in one case in particular a melancholia with suicidal tendency by reference of the patient to an oculist who fitted the proper glasses. Ophthalmic migraine is undoubtedly due to a disturbance of the vasomotor system, following a constriction of the intra-cerebral vessels with the modification of the flow of cerebro-spinal fluid within the ventricles, intra-ventricular tension and possibly increased cerebral pressure affecting the entire brain.

In diagnosing syphilis of the nervous system a neurological examination of the eye reflexes is of great importance. As factors, we note the size of the pupil, its irregular margin, slow reaction to light, and alteration in response to acommodation, the last two combined developing perhaps to the full Argyll-Robertson pupil, a sign which

is considered fairly positive of syphilis of the nerve system. In multiple sclerosis, chronic hydrocephalus, tumors of the cerebellum, epilepsy, chorea, hysteria and neurasthenia we find a nystagmus.

It may also be found in Friedreich's ataxia and partakes of the nature of intention tremor, as it is not visible when the eyes are quiet, appearing when an attempt is made to move them. The most common form is lateral, though other forms may occur.

A lesion affecting the various nuclei of the optic nerve and the motor nerves of the eyeballs, or the very complete system of association fibers joining these various nuclei, interferes with conjugate lateral motions. Irritation of the motor centers in the cortex causes involuntary turning of the eyes away from the side of the lesion. This happens in epilepsy when the focus of irritation which starts the fit is unilateral. Paralysis of the motor centers in the cortex or destruction of the tract which conveys their impulses will eventually result in conjugate deviation of the eyes toward the side of the lesion, for the eyes being once turned in that direction remain fixed, there being no possibility of a voluntary correction of this position. Hence, in severe attacks of apoplexy when this tract is destroyed the patient is said to look toward his lesion.

The diagnosis of the situation of a lesion producing forced conjugate deviation of the eyes can only be made from the existence of other symptoms of cerebral or pons disease.

There are very few absolutely infallible signs of lesions of the nervous system, but none come so near as Wernicke's test for a hemiopic pupillary reflex. It is an indication of organic change either in the optic tract or among the basal ganglia. In making this test the patient must be examined in a dark room, the eyes only faintly illuminated so that the pupils are fairly dilated. A ray of light thrown by a mirror from one side carefully on the blind side of the retina will elicit no pupillary reaction.

Preceding the actual edema of the optic nerve constituting choked disc we frequently have a hyperaemia or anemia of the optic nerve accompanying corresponding conditions of the brain. Though somewhat difficult to recognize because of the wide range of color of the retina and the calibre of the blood-vessels in different individuals, hyperaemia may be said to exist when the disc is of a blood-red or brick color, the edge of the disc not being distinguishable from the

rest of the retina. Hyper-sensitiveness to light and pain on using the eyes are indications of its presence. It is of interest to the alienist because it is found in some forms of insanity.

The early stage of atrophy may be mistaken for the pallor of anemia, which latter is frequently found accompanying a general anemia. Cases are on record in which it was caused by an embolism of the central artery of the retina. Obviously a similar anemic condition may be caused by a thrombosis, and this may be associated with a general cerebral arterial disease and be of prognostic importance as indicating a widespread arterial disease.

As intimated above, the alienist is vitally interested in knowledge of the normal and abnormal conditions of the eye and its appendages. In dementia praecox, for instance, definite fundus changes are reported, comprising a perineuritis of the optic nerve with its hyperaemia and edema, its dilated, dark-colored veins, its slightly contracted arteries and blurring of the edges of the discs. There may occur also a congestion of the nasal side of the discs with a pallor of the temporal side, with dilated veins and contracted arteries; or these two latter conditions may exist with a definite pallor of the entire disc. These changes in the eye syndrome were found most marked in the more rapidly deteriorating types of the disease.

The presence of central scotoma was definitely demonstrated to be a diagnostic point as between tobacco and alcohol users who presented the symptom and cases of dementia praecox, in none of which was it found. These cover an investigation of more than one hundred cases of this latter disease.

Investigators express their belief that there is some powerful toxin responsible for disc changes in dementia praecox and that this is primarily a vascular poison, its most probable source being either in the autointoxication from the intestines or liver, or a faulty metabolism from a perverted action of some of the ductless glands, especially the thyroid.

There was demonstrated an average enlargement of about two mm. in the size of the pupil. The light, accommodation and convergence reactions were active in eighty per cent. of the cases and sluggish in the balance. The conclusions of the investigators above quoted, Drs. H. O. Tyson and L. Pierce Clark, New York City, are as follows:

"1. They indicate that dementia praecox is attended by such an

early and constant syndrome of alteration and disc, visual field, pupil and corneal sensibility as to materially aid in diagnosticating this psychosis. Consideration of the syndrome will particularly aid in the differential diagnosis of dementia praecox from the manic-depressive group, acquired neurasthenia, hysteria and the various forms of imbecility and constitutional inferiority.

"2. The syndrome is a distinct contribution to the theory that dementia praecox is an autotoxic disease and that the poison is primarily vascular, which finally induces neuronic degeneration. It points to a toxin of some sort, which is either a metabolic defect in the tissues (ductless gland defect), or, what seems more probable, that the poison is generated in the liver or in the gastrointestinal tract itself.

"3. The syndrome is of prognostic value, as the severer grades of eye changes are found in the more rapidly deteriorating cases.

"4. Finally, the optic nerve lesion is quite in accord with our best knowledge of the pathologic anatomy of dementia praecox in other tracts of the brain (than the optic nerve, which itself may be counted an analogue). The early vascular changes in the brain ought to receive more serious investigation."

In dementia paralytica the pupillary anomalies antedate other symptoms for a long time. The contracting, irregular, sluggish or unequal pupils may be observed for years before the development of definite mental perversions. Perhaps the best word to use as indicating the keynote to the pupil symptom is that the pupils are irresponsive. We may also say that this irresponsive condition coupled with pupils unequal or irregular in size and shape will strongly suggest the incipient stage of paresis. This would be made almost a certainty if the pupils act differently to light.

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655-659 Rose Bldg.

CONGENITAL ABSENCE OF THE ARTERIA CENTRALIS RETINAE WITH EMBRYONIC REMNANTS OVER THE MACULA LUTEA

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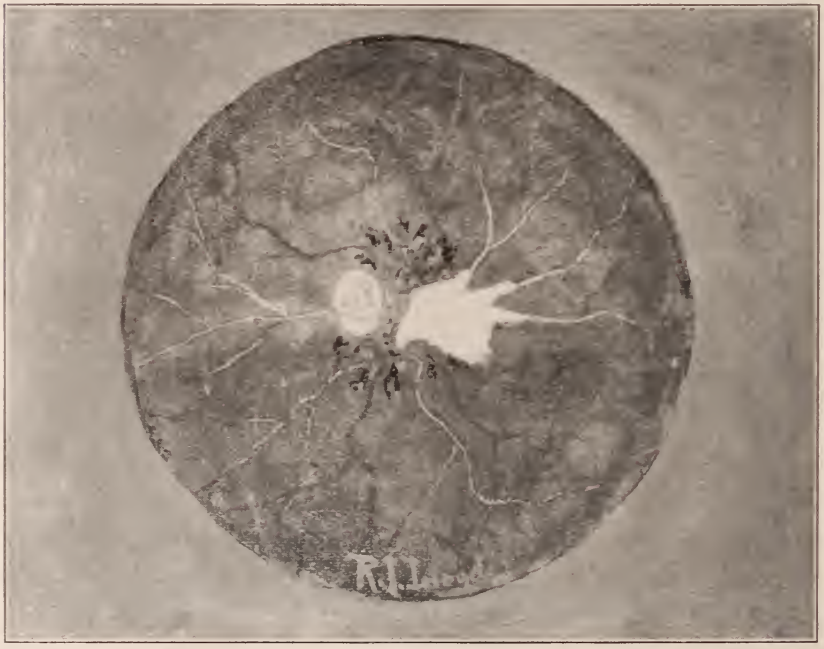
THE usual departure from the typical arrangement of the retinal blood supply is the addition of an occasional post-ciliary artery. We see these rather frequently and they are said to be a factor in retaining a part of the visual field in cases of blocked central artery. Blocking of the central artery is rather rare and in the cases which I have seen no ciliary artery was present to demonstrate its usefulness in this severe affliction. It was my fortune to see a rather unusual arrangement of the blood supply, together with a peculiar condition, probably inflammatory in part and in part developmental.

Mr. S. asks that his eyes be straightened. He has a marked right divergent squint which dates back nine years. He says this eye aches when he is tired and is not as strong as the left. There is history of moderate injury about a year prior to the appearance of the divergence. It was bloodshot for a few days after the injury, but it is very doubtful if this was a factor in the case.

Examination of the eyes shows the ability to count fingers at two feet with the right eye if they are held below and to the right of the usual position, demonstrating what might be called an acquired macula located to the inner side of the usual position. His central vision is nil, but the limits of the field of vision are normal, although it is rather difficult to make this test on account of difficulty in holding the eye in one position with poor fixation. The disc is whiter than usual, but of normal size. Near the center is a pit with a border of pigment, indicating the site of the expected central artery. On the macular side of the disc is an elongated pigment patch. The place of the central artery is taken by a number of posterior ciliary arteries which enter the eye to the macular side of the disc. The veins do not unite, but make their separate exits near the arteries. The openings of entrance and egress are located in the form of a circle with a point midway

between the disc and the usual site of the macula as the center. The area inclosed in this circle and the adjoining area is speckled with very dark pigment and white spots. The pigment predominates and the white spots glisten. Covering the macular area, anterior to the blood vessels, with finger-like processes extending along an artery where it leaves this patch, in a mass of glistening material and very white.

The absence of the central artery and the presence of the ciliary arteries and veins is of course a freak of nature. The pigment spots and the white patches would indicate an old inflammation. The glistening white material would seem to be embryonic material, which should have been absorbed in the course of the changes which take place and result in the disappearance of the hyaloid artery and accompanying tissue. Perhaps an intra-uterine inflammation may account for the non-disappearance of this tissue and the presence of the pigment and white spots adjoining.



A photograph of a water color of the interior of this eye is of interest and demonstrates the difficulty of satisfactorily photographing a non-actinic color like red and a highly actinic color such as white.

Dr. Alton G. Warner examined the patient and criticized the water color and was kind enough to approve of my humble effort.

450 Ninth Street.

HAY FEVER AND ITS TREATMENT

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Boston.

IN our consideration of this subject we should remember that the term hay fever is frequently a misnomer and we should be more exact in our nomenclature, at least for purposes of study, and recognize two distinct chronic and periodic conditions, substituting for one form vaso-motor or hyperesthetic rhinitis and for the other pollen fever, rose coryza—or designate the pathological state by a prefix signifying the known external source of the irritation.

This disease was exhaustively studied by Blackley, a homoeopathic physician of Manchester, England, in 1873, who reached certain conclusions regarding its causation. These have been confirmed by Bostock, Elliotson, Dunbar, Beard, Daly, Sajous and others at different periods. Blackley's conclusions were that the periodic form was produced by certain pollens in susceptible persons having an obscure neurotic idiosyncrasy.

Hyperesthetic rhinitis may be caused by lowered conditions of bodily health, such as (a) disturbed digestion, deficient elimination, loss of sleep or nervous shock, by slight colds or infections, or (b) by an almost infinite number of external irritants, like car dust, flour, carpet dust or hay pollen; by different animal odors, sudden changes in atmospheric conditions; (c) by local pathological changes, such as deviated septi, ridges, spurs, polypi or hypertrophied turbinals, and (d) by a generally increased sensitiveness of the nasal, conjunctival and bronchial membranes.

The presence of a definite hereditary neurosis is common to both types and is often manifested by eczema in childhood, alternating with asthma and attacks of nervous coryza later in life.

In many of these cases the lessened bodily resistance and the partial vaso-motor paralysis form a combination favorable to the development of micro-organisms, and this I think is now clearly recognized. When such cases are complicated with—particularly—the so-called bronchial asthma, the bacterial invasion becomes more definitely manifest.

Pollen fever, or the periodic form, presents also varied manifestations. Dunbar "succeeded in obtaining three definite products from the pollen grain—(1) a peculiar toxic albuminous substance, (2) a starchy substance, and (3) the essential oils. The toxic substance (which was the only one of the products which produced any specific effect) was extracted from the pollen by means of a saline solution and precipitation by alcohol. It was found to have a marked effect in pollen fever patients, even when applied in small quantities, whereas in those not predisposed to the malady no action was to be observed." Sufferers from pollen fever usually have two different periods of nasal irritation—one in June, with a July intermission, and another about August 10th to the 15th, often associated with asthma and lasting until frost.

After the attacks are ended the patient may be entirely free from further trouble until the following year. In other cases the repeated yearly summer attacks gradually produce a condition of chronicity.

From our study of these cases it is clear that no one form of treatment will ever be found capable of curing all cases. The individual and his peculiar symptoms must be considered. Treatment then should be primarily directed toward increasing bodily resistance by hygienic, dietetic, medicinal and other measures.

The matter of proper elimination of waste products should receive especial attention in this general treatment. The nose should of course be made as nearly normal as possible by such surgical measures as may be found necessary, and the sensitive areas which can be located with a probe should be desensitized by the actual cautery or glacial acetic acid. It is the writer's custom to locate three or four of these sensitive areas before an anaesthetic has been used; then to apply the anaesthetic, and use the cautery.

*Young states that the nasal tubercle, a small spindle-like prominence situated on the septum opposite the anterior portion of the middle turbinated body, will be found hypersensitive and should be removed. His method, as described, consists in removal of the nasal tubercle by means of a spoke-shave; if necessary the removal of the anterior portion of the inferior turbinal, and the correction of any nasal deformities which may exist; the whole series of operations being done at one time with the patient under a general anaesthetic. Dr. Young

*Hay Fever and Pardoxysmal Sneezing. Wm. Wood & Co., New York.

claims good results. The writer has had no experience with this particular procedure.

The infectious process should be met by measures directed toward creating immunity against the invasions of micro-organisms, by the use of autogenous vaccine, or by one of the many commercial vaccines now before the medical profession.

The writer must personally confess to indifferent results with autogenous vaccines, and to favorable results in many cases with the preparation devised by Dr. A. F. Shafer, of California, which is based upon the theory of multiple infection. His vaccine is the porcelain filtered metabolic product of mixed bacteria of different strains, to which is added a suitable preservative. This preparation has been of great use to the writer in many cases suffering from the chronic form and having asthmatic complications. The writer has been using this preparation for some years, with increasing satisfaction as he becomes more familiar with the process of administration and dosage.

Pollen fever patients should also be treated by the general measures above suggested, and at the same time with some method of immunization against the specific pollen. Dunbar's pollantin will, in a small proportion of cases, be found beneficial. This pollantin consists of the serum of horses which have been inoculated with the toxin. A preliminary injection is first made in order to ascertain if the horse is susceptible to the latter, and if this proves to be the case the substance is injected in gradually increasing quantities for a period of two or three months, about which time the formation of the anti-serum usually commences. When a high antitoxin standard has been attained a suitable quantity of blood is withdrawn, not less than ten days after the last inoculation, and this is then made into a serum.

*Koessler has treated quite a number of pollen fever cases with pollen extracts, hypodermically injected, and has succeeded in producing immunity in over fifty per cent. of his cases. Otis Clapp & Son, of Boston, were kind enough to make up for the writer some of these extracts last summer and fall according to the method of **Loudermilk, and the writer is making plans to use them this year, together with the vaccine above described.

The general bodily resistance can be increased by the tonic effect of the indicated homoeopathic remedy. Those which will frequently be found useful are arsenicum, arsenicum iodide, arsen. of strychnia

and arsen. of quinia, aurum triphyllum, allium cepa, naphthalin, sanguinarium nitricum, ipecac and lobelia, and the iodide of potassium, the latter in material doses. Adrenalin chloride, diluted with a normal salt solution one to three, for use as a nasal spray, will give temporary relief in some cases. The same drug diluted with an equal quantity of normal saline in ten to twenty minim doses of the mixture will almost certainly give from three to four hours respite from severe asthmatic paroxysms.

The usual sprays and douches are, in the writer's experience, worse than useless.

The writer wishes to emphasize a statement of Hahnemann which he has often repeated; that is, the necessity always of individualizing, or in other words, the discovery of the symptoms peculiar to the patient and adapting the treatment to the peculiar symptoms.

*Illinois Medical Journal, August, 1914.
**Journal of the American Medical Association, July 11, 1914.

VACCINE IN HAY FEVER

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SOME years ago a notable advance in the treatment of certain infections was made by Sir A. E. Wright, of England. While investigating certain phases of immunity and immunization he noted that not only could a person's resistance against a given organism be artificially increased in the normal condition, thereby preventing infection, but that such an increased immunity could also be induced in certain people who were at that time suffering from the effects of the same organism, thereby modifying or ameliorating the actual disease. This increased immunity was induced by the subcutaneous injection of the toxic products of the bacteria, usually intimately associated with the dead bodies themselves. To these substances the erroneous name of "vaccines" was unfortunately given on account of the somewhat allied action of the true "vaccine" in smallpox prophylaxis.

This method once introduced spread with great rapidity throughout the English-speaking world, and, as might be anticipated, was tried in the most diverse diseases, with reason or without reason, where the indications were logical and where they were fantastic. But one termination could follow. The extravagant claims of unwise enthusiasts were not, could not be, fulfilled, and a period of pessimism replaced the earlier optimism. From both of these periods the medical world is now emerging to the recognition of the true place of vaccines in the therapeutic list. It might be here stated, parenthetically, that vaccines as true vegetable products may be correctly classed as drugs and might as such be properly included in a materia medica.

At present, staphylococcus vaccine is practically universally recognized as an efficient aid in many forms of infection by that organism, particularly furunculosis, septic wounds and a number of localized infections. Classed with this may be the gonococcus vaccine—of particular value in gonorrhoeal arthritis. One other vaccine also belongs here; namely, that of bacillus typhosus in the prophylaxis of typhoid fever. It is in the opinion of the writer unfortunate that the

same unanimity of opinion does not hold in the treatment of typhoid, but such is not yet the case.

When we go beyond these confines in the vaccine field we enter territory less well known and more uncertain. The majority of physicians admit the benefit to be obtained from tuberculin at the hands of those skilled in its administration. Many also use the proper vaccines with advantage in erysipelas, localized streptococcus infections, otitis, peritonitis, osteo-myelitis, pneumonia and various respiratory conditions, both acute and chronic. In part, doubtless, the divergence of opinion is due to the increased degree of skill and experience here necessary.

In the lesions of the respiratory tract, those conditions that at first seemed to be the ones best suited for treatment, in theory at least, have upon the whole proved to be rather disappointing. This is particularly true of chronic rhinitis, accompanied by involvement of one or more of the accessory sinuses, and is probably due to the difficulty in providing good drainage and an adequate circulation of blood and lymph. Even here, many cases have undoubtedly been much improved or entirely cured by intelligently used autogenous vaccines. A large number of the less chronic respiratory infections are subject to much amelioration by these agencies, while particular stress can be placed on the recurrent affections, such as recurrent rhinitis, pharyngitis, etc.

We may say that in any of the various respiratory diseases where bacteria can be demonstrated as causative agents it is entirely logical to use a properly selected vaccine, particularly autogenous.

When we take up the subject of hay fever and its etiology we at once enter a realm where there is much uncertainty and variation of opinion.

It seems conservative to state that the cause of hay fever is varied from individual to individual, and that in the great majority of cases the particular cause is unknown. Apparently one person reacts to the irritation of certain constituents of the dust, particularly pollen from various flowers, while another case may be brought on by other so-called "inert" substances. Apparently, also, the particular varieties of pollen act specifically on certain persons, one variety being a cause in one case and another in the next one.

The clinical symptoms of the disease and its peculiar periodicity will not be detailed here, as they are all too familiar to need repetition.

In the profuse discharges characteristic of the disease there are almost always found an abundance of bacteria. It has accordingly seemed possible that in not a few instances the original condition may have been aggravated by these other bacteria as a secondary infection. In fact, in not a few cases it seemed as though the bacteria themselves were the actual exciting cause of the disease. Influenced by such beliefs an attempt has been made during the past few years to immunize the individual against those bacteria that most commonly inhabit his respiratory tract, usually the pneumococcus or the streptococcus. By so doing it is hoped to control the secondary infection and thus render the disturbance more bearable, or if it be purely an infection to prevent it entirely. The treatment has been, largely at least, prophylactic. The method followed has been as follows: About a month or six weeks prior to the date of the anticipated attack cultures are taken from the nose and mouth of the patient and an autogenous vaccine, usually a mixed one, is prepared. This vaccine is then administered at intervals of from four to seven days till the time of the expected onset of the disturbance, or longer if that onset is delayed.

In the practical application of the treatment very varying results have been obtained. It is certainly safe to say that the majority of the patients reported at least amelioration of the disease for the season. One of the earliest cases was that of a real estate agent who had not safely passed August 21st for years, and who was compelled to leave the city, much to his financial detriment. Autogenous vaccines were begun in July and continued till mid-September. The only trouble he noted was two "colds" each of a day's duration.

At the same time another patient, a nurse, also due for trouble on the identical day, was treated identically. On the usual day the symptoms appeared as usual and persisted for the usual interval, although in a less severe form than in the previous attacks. These two cases show the two extremes between which many other cases might be reported. Such an extensive citation will be unnecessary, however.

Recently some very interesting work has been done with the various pollens in the way of ascertaining the susceptibility of individuals to specific varieties by the use of a modified cutaneous test. Influenced by the results thus obtained we are now advising as a routine treatment alternate treatments of a mixed "pollen vaccine" and autogenous vaccine. The object of so doing is to immunize against a

number of the most irritant pollens, also against the common bacteria of secondary invasion. By this means we expect to obtain better results than by the use of either alone. At present too few cases have been treated to justify any dogmatic statements or dependable conclusions, but as far as we have gone these results have been distinctly gratifying.

We are living superficial lives nowadays. This is the age of automobiles and our minds have gone motoring.—Pres. J. G. Schurman.

"It costs more to live nowadays."
"Yes, but it's worth more to live at present."

"There were giants in those days."
"Goliath's bulk didn't save him from little David."

SO-CALLED STOCK VACCINES AND THEIR VALUE IN SUPPURATIVE MIDDLE EAR DISEASE

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Philadelphia.

THE subject of vaccines and their value reminds one of the war discussions that we hear on this side of the water—everyone talks at length on the subject, but there is a surprising meagerness in the amount of exact information given and in authoritative opinion. There is no doubt that the matter is by now decidedly monotonous, for although much has already been established, most of the present literature on vaccine therapy is either unreliable or a rehash of former work. Investigations are inspired along certain preconceived lines and the experimental work is carried out merely to confirm and substantiate a preconceived theory. Few indeed are the instances where an author, conscious of the ineffectiveness of a certain accepted line of treatment, will come out and announce the fact that he finds in it nothing of value. One who does this gets no credit for having performed what I think is a good service. He gets the calumny of the sensationalist who has preceded him and who has been and still is booming this line.

I look back now on the spirit that I had when, some years ago, I first read the report of the A. M. A. committee on vaccines. This report was very unfavorable. I considered it ultra-conservative and thought of the harm of thwarting and stunting the efforts of young, enthusiastic men who apparently were ambitious enough and successful enough to establish a good addition to our science.

Vaccines were at that time, as now, advertised extensively; everyone was using them in a hit-or-miss way, just as many do now. There was, however, nothing but a well-sounding hypothesis behind it all. The analogy was drawn between one or two infectious diseases that were helped by vaccines and serums, and all infectious diseases. My own enthusiasm had been fostered by some public health experience in New York City, where preventive medicine thrives under the leadership of the best men in the country. I was filled with enthusiasm when I saw what antitoxin, anti-tetanic serum, typhoid vaccine, the

Pasteur treatment and the work on meningitis had accomplished, and with this same spirit the subject has always filled me with interest in its relation to fields where we might find it of use.

The committee's report was particularly antagonistic to the "stock" vaccine, and in this line I was anxious to prove out to myself the true condition of affairs. My plan was to observe a sufficient number of chronic suppurative ear cases for a sufficient period, free from any treatment, and thereby get cases whose condition I knew, which would possibly be more stable and chronic than the average suppurative ear case. I was then going to start vaccine treatment.

The cases were picked from the clinic as they came and observed for two or three weeks, no treatment other than lavage being used—in many cases no treatment at all. Some of these cases would clear up of their own accord in the course of this time and these would be dropped; the rest were carried on to vaccine treatment. The latter were supposedly more chronic, but nevertheless occasionally showed a tendency to clear up irrespective of treatment. This factor is most important to keep in mind in the study of the value of vaccines—the normal variability and independability of the disease process. The cases had originated at periods varying from a few months to many years back, the average case being of five years' duration. They were about equally proportioned between children and adults. The vaccine was obtained fresh from the producer with his knowledge that it was to be tried out. The first used was a Mulford mixed vaccine, "sensitized" by the addition of horse serum. From this, these same patients after about two months' time went on to Sherman's mixed vaccine number 36, and from this to phylacogens. (The merits or demerits of the latter will not be dealt with in this article, for their trial was not sufficiently extensive.)

The results of the investigation may best be paragraphed shortly as follows:

THE TRIAL OF STOCK VACCINES ON OTITIS MEDIA CASES

Vaccines used:

Staphylo-bacterin mixed, sensitized, C°.

Streptococci	1,000 million
B. Coli	1,000 million
Staphylococci (aureus and albus)	2,000 million

Sensitized by the addition of horse serum.

A mixed Vaccine.

Friedlander B.	300 million
Micr. catarrh	200 million
Pneumococcus	80 million
Streptococcus	60 million
Staphylo. aur.	200 million
Staphylo. alb.	200 million

Mixed Phylacogens (P. D. & Co.)

The cases for the most part were chronic purulent otites that had been on lavage treatment for some time and found to have had a nearly continuous discharge. There were thirty of these chronic cases treated, and thirteen acute cases.[1] Twenty per cent. had both ears involved.

The average duration of the chronic cases had been five and a half years.

Four of the acute cases became chronic during the treatment; they were under no other treatment during this time.

Seven acute cases dried up promptly; many did so apparently more quickly than usual.

Chronic cases noticeably improved, six.

Recurrences (in four months' time), four cases.

The ages of the patients ranged from one year to fifty-seven years, averaging five years.

No initial increase in the discharge was seen. There was the suggestion at times that the vaccine was clearing up the infectional element, for a number of cases for a time became simply catarrhal.

In seven of the cases (children) adenoids were present, but operation did not seem to have any appreciable effect in lessening the discharge. Two of these cases had had adenoid operations; one gave a clear history of having been operated upon four times. (There is the possibility of the operations having been incompletely done, but at any rate a large adenoid was present in both cases.) Tonsillectomy and adenectomy had no unfavorable effect on the otitis media, and in these chronic cases of ear discharge with no probability of them clearing up it was considered justifiable to go ahead with the operations if they were needed.

Nothing like a resistance, an immunity, and often not even a

[1]The study was actually one of the chronic cases, but a number of the acute cases were run as a matter of interest.

reaction was seen. Local tenderness was slight when the bulk of vaccine was kept small. When large doses were given multiple injections were made. On one occasion the sensitized vaccine gave a slight urticaria. At another time the vaccine was by mistake injected into the skin rather than under the skin, and the patient suffered a slight annoyance. Precaution was taken when giving the "sensitized" vaccine to question the patient as to the disposition to hay fever, asthma and as to the effect of animal odors.

The dosage of the vaccines ranged from 21,000,000 to 2,520,000,000. The latter was a huge dose given to see the possible danger of the vaccine (Sherman's No. 36). Sensitized vaccine acted apparently no differently. The vaccines were all "within the time dated."

No autogenous vaccines were used except in one case and in this to no benefit. The study was one of the commercial vaccines.

Previous to taking up the work, thirty-one cases treated with simple lavage were observed. Results were almost negligible except as to the relief from excoriations and eczema of the canal and auricle.

It was surprising how few of the cases had any (permanent or chronic) trouble with the nose or throat—adenoids being an exception.

No case of cholesteatoma was treated, nor of bone necrosis, but two cases of post-operative mastoid discharge were unbenefited; one was a persistent post-auricular sinus.

To show how difficult it is to reach conclusions the following cases are cited:

Israel F. had for six years nearly continuous discharge from the right ear; sent to Dr. Richardson for an autogenous culture; the ear cleared up rapidly before the culture was prepared.

Anna O., age 19, has had a continuous discharge from both ears since she was three years of age; the right ear cleared up just before autogenous vaccine was started; the discharge from the left diminished markedly, but did not cease. Vaccines seemed to dry it up completely, but it recurred early.

The results obtained cannot make one enthusiastic. Undoubtedly a small number of cases were helped, and with a chronic condition such as purulent otites is it may be worth while to consider the use of a fresh, well-kept vaccine as an adjunctive treatment. It apparently can do little, if any, harm.

It is difficult to say that acute cases are hurried along in their

ultimate recovery, but from these few cases it would appear so. These acute cases were not ones that had cleared up immediately after the rupture of the drum, but had been running along for some days before being seen. Others that I have spoken to have also said they noticed the benefit to subacute cases. It perhaps is an unfortunate matter of chance that four of the acute cases became chronic during the treatment.

Ascending doses reaching often a supposedly massive size gave no reaction. (Phylacogens were given more cautiously and increased by watching the reaction. These phylacogens were the only ones that gave reaction.) *No one of these remedies seemed of more value than another.*

The organisms found from smears:

Staphylococci in pure and in mixed infection.

Diphtheroid and pseudo-diphtheritic organisms.

Colon bacillus (two cases).

Streptococci.

Bacillus pyocyaneus (three cases).

CONCLUSIONS

1. The value of reports of this kind depends directly upon the disinterestedness of the observer—upon his lack of mental bias; the value is directly proportional to the number of cases studied.

2. There should be constantly kept in mind when drawing conclusions as to the value of vaccines in suppurative ear cases these facts about the condition:

a. You are dealing with a localized infection which may be for years only saprophytic. The disease process may run on insignificantly, slowly, not manifesting itself by systemic symptoms, and virtually walled off.

b. Chronic suppurative ears, even though drying up, are pathological and more susceptible to re-infection at any time.

c. You are putting under the skin toxins that more than likely the body has already learned to tolerate easily; hence the lack of reaction frequently.

d. In acute cases, however, you are adding a toxin to that already disturbing the system and causing reaction.

A most important demand is made upon the investigator to follow up the cases he studies. He will find that an old suppurative ear,

though dry, is predisposed to recurrences, a simple, commonly known fact, yet one that often is not considered when we hear of "cures." Just recently I was told by a colleague of the tracing of twenty-six cases that a year ago he considered cured by vaccine treatment. He was able to see twenty-four (if I remember correctly) and of these the greater number had recurrences; there were four or six that had remained dry. It is interesting to note that the recurrence may not show the same infectious organisms as were previously found. Dr. Coates, of Philadelphia, had a most interesting case that gave in each of two attacks pure cultures of different organisms.

Again, let me say in conclusion that results on the whole were very convincing of the inefficiency of "stock" vaccines to cope with chronic suppurative ear disease.

1805 Chestnut Street.

POST-GRADUATE INSTRUCTION

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AS one of the results of the European war the subject of post-graduate instruction is becoming more and more important as time passes. The general dissolution of the teaching forces of the old world, as a result of military necessity, has brought us face to face with the fact that in this as in many other lines, we must, for some time to come, supply our own needs.

The subject is a large and most pressing one and in order to give it proper consideration we must first realize what the term includes. Methods must vary in accordance with the requirements. The student should not be fitted to the course of study; on the contrary, to achieve the best results the curriculum must be adapted to his necessities.

There is or should be a great difference between a course of instruction prepared for the general practitioner desirous of fitting himslf for expert work in a given line and that offered to a physician who has been practicing a specialty for five or ten years and comes back to school to "brush up." The latter, if he has been properly educated in the first place and has been anything of a student, is already in possession of the ground-work so necessary to the former, and experience has pointed out his deficiencies together with the remedy.

Many things which are a sealed book to the novice are entirely familiar to him, and a thorough course of instruction in all the subjects coming under his line of work would be a waste of valuable time. He is looking for material to fill the gaps in his armamentarium which are due to the lapse of years; the latest pathology of certain diseases, new methods of treatment, new operations or recent modifications of old ones, in short everything necessary to bring him up to date.

The beginner, on the contrary, comes to us with only the general knowledge of medicine which is supposed to be the common property of all those whose credentials give them the right to practice the art.

plus whatever he may have gained by reading, observation and the practical experience acquired by the treatment of disease in general. He comes, let us say, to become competent to practice the specialties covered by the JOURNAL—the eye, ear and throat. Not infrequently his knowledge of the organs mentioned is confined to their coarse anatomy and a more or less (usually more) hazy idea of their physiology and pathology, especially the latter. He may and usually does have sufficient knowledge of the throat to treat successfully the ordinary ailments met with in general practice. His knowledge of the eye is usually less; here he may at times do absolute harm by confounding the symptoms proceeding from serious affections of the deeper structures with those due to superficial disease.

The ear is a blind alley to him; beyond removing hardened wax and treating the simple (?) earaches and discharges in children he seldom interferes with it.

The above statements are intentionally extreme and do not apply to all medical men. Many physicians of extensive practice under certain conditions find it necessary to have more or less of a working knowledge of the branches mentioned, but these are apart from the class considered, which mainly consists of the ordinary family practitioner with a moderate-sized practice, who becomes tired of the drudgery of general work and desires to become a specialist.

Here we have presented the other extreme. To place such a man in the ordinary "clinical" school, to have him listen to lectures which he does not understand; witness operations for the amelioration or removal of diseases of whose etiology and pathology he knows nothing; to treat him to a series of moving pictures of subjects with which he is not in the least familiar, is to fill his mind with a hazy jumble of ideas of which he does not possess the key and he goes home possibly a little more of a danger to the community than he was before he started out; because now he *thinks* he knows something of the subjects which he went away to study, while before he *knew* that he possessed no such knowledge.

In reviewing the subject under discussion we are thus immediately confronted by the fact that we have at least two distinct types of students to deal with; the first the inexperienced man who for his own best good must be supposed to have no knowledge whatever of the subjects taught, and who must be credited with the desire to

undergo the most thorough preparation for his future lifework; this to be based on the broad ground-work of a thorough drilling in the embryology, anatomy—both coarse and microscopic—bacteriology, physiology and pathology of the subjects considered, supplemented by a large measure of didactic and clinical teaching of the etiology, diagnosis, prognosis and the various methods of treatment of disease, both medical and surgical. The result, given a man of fair average intelligence and industry, will be a competent and well-equipped physician in his chosen specialty.

For the second type of student much of this curriculum is unnecessary. The elementary portion of it he has acquired perhaps years ago and his years of special practice have made him familiar with much of the rest of it. As before stated, he feels himself lacking in certain directions and he comes to the medical center to perfect himself in these particulars. He requires intensive courses in the comparatively few subjects in which he is interested; not simply going over the subject once, but repeating and "digging in," over and over, until he has it firmly fixed in his mind. For him the clinical school is the best, where he can choose his subjects and put his whole attention upon them. Clinical schools? Yes, but not the average clinical school as it has been conducted in the United States, where the student pays his money and is allowed the valuable privilege of picking up such knowledge as he can on his own initiative. In the past our clinical schools have suffered in competition with those of Europe because of their careless methods. There has been no such "grilling" work done here as, for instance, there is in Germany, where the student must come up to the scratch or be ground to powder. Happily we are improving, and we have courses in special subjects here and there which are worth while, but we have a long way to go before we shall do the work as it should be done and as it must be done if we are to retain the accidental position conferred upon us by the war. Let us hope that some of our hospitals and colleges, many of which are heavily endowed, may take up this work in a sufficiently exhaustive manner to keep the United States on the medical map.

FOUR INTERESTING ATYPICAL CASES OF MASTOIDITIS, TWO WITH INTRACRANIAL COMPLICATION*

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THE symptomatic manifestations of acute suppurative inflammation within the mastoid depend largely upon the anatomical makeup of the process. This has been clearly considered by Dr. Gilbert J. Palen in a recent article on "An Atomical Consideration of Mastoiditis" (*New England Medical Gazette,* April, 1915) in which he shows conclusively the reasons for the occurrence and variability of the symptomatology.

The average typical case of mastoiditis presents but little difficulty in diagnosis, for there is usually a history of an aural discharge, the ear drum inflamed and presenting a perforation, redness of the canal walls, with possibly swelling or sinking of the postero-superior wall, the mastoid process tender at the three cardinal points or diffusely; there may be masking of the mastoid tip with rigidity of the sterno-mastoid muscle and, if the case has progressed to a rupture through the outer plate, bogginess of the soft structures, or a fluctuating swelling marking the development of a sub-periosteal abscess.

Wide variations from the foregoing classical clinical picture occur and it is these cases which are deceiving to the occasional or casual observer. In certain atypical cases there is no rupture of the ear drum with discharge from the middle ear, or the discharge may clear up and the drum heal before the onset of the mastoid symptoms. This occurs notably in that form of mastoiditis known as Bezold's mastoiditis and also in patients who have markedly hypertrophied drums. It is possible to have a well-marked swelling and advanced mastoiditis without pain or tenderness. The position of the swelling may be above the ear (typical in infants) or slightly anterior to the auricle in the position of the root of the zygoma, and this is found where there are well-developed zygomatic cells. It is not the object of this paper to discuss the many atypical forms of mastoiditis, but to record the clinical histories of a few of the cases which have come

*Read at the May meeting of the Clinico Pathological Society.

under our attention and which we feel will be of interest.

The first case to which we would invite your attention is that of a feeble old lady, eighty-seven years of age, who was seen by her family physician the latter part of January of this year, when she was suffering from pain in the left side of the head and face along the lower jaw. He did not see the patient again until the beginning of March, at which time she complained of pain in the left mastoid region. At no time had there been any discharge from the ear. The temperature and pulse were normal. We were called to see the patient March 7th, and upon examination found her to be quite dull of hearing, it being necessary to use loud conversational voice close to the ear. The family stated that the patient had always been dull of hearing, but since the neuralgic attack this had become considerably worse. The external auditory canal on the left side contained considerable dry, scaly material. The drum was intact, but presented a waxy appearance. There was no bulging. The canal walls were not injected. The right external auditory canal and membrana tympani presented similar changes. The left mastoid region was reddened and upon palpation thickening of the soft structures over the tip was noted. There was marked tenderness on percussion. We incised the left membrana tympani, but no discharge followed, either immediately or subsequently. The family and the patient expressed strong opposition to further operative interference and we anxiously awaited developments. The physician in attendance watched the patient and three weeks later again asked us to see her. At this time there was present a well-developed sub-periosteal abscess over the left mastoid. The family and the patient still holding out against any major operative procedure compromised by permitting us to open the abscess under local anaesthesia. A very satisfactory free post-auricular incision was made, evacuating a large quantity of very thick, greenish, inoffensive pus. We succeeded in curetting out of the completely broken down mastoid considerable granulation tissue and packed the wound with iodoform gauze.

It is now several months since the operation and the patient is in excellent condition with the wound healed.

This case is interesting to us because of the extreme age of the patient and also because of the absence of discharge from the ear. This is quite likely to occur in elderly patients who have thickened

drums. We regret that we did not have culture media at hand when the abscess was opened, hence we are unable to define the bacteriology of this case.

The second case we present for your consideration is that of a child eight years of age. The mother stated that the child had been delicate since an attack of pertussis at the age of two years. There was no previous history of aural disease, although the child had passed through an attack of measles.

The ear condition started early in March with neuralgic pain in the right ear, rapidly following in the left ear. At this time she had a peculiar rhinitis—the doctor who attended her stating that he had never seen such a peculiar gummy discharge from the nose. There was complete cessation of pain in the ears without discharge. Several days following, a swelling appeared in the left temporal region extending up over the head and forward to the eyelids. These were so puffed as to completely close the palpebral fissure. There was no pain and the attending physician stated that the temperature reached 100 degrees in the afternoon. Upon examination we found an anaemic child, presenting a swelling involving the temporal region from the zygomatic arch upward for a distance of three inches and forward to the orbit. This swelling was hard, pale and sensitive only at the root of the zygoma. There was no fluctuation. The left mastoid region presented no redness or swelling, the tip could be outlined distinctly and there was no tenderness. The left external auditory canal was free, the drum pale and bulging. We incised the drum, evacuating a mucoid secretion having the macroscopic appearance of saliva. The hearing was markedly impaired in the left ear.

On account of the recovery of secretion from the middle ear and the marked tenderness at the root of the zygoma, we made a diagnosis of mastoiditis and advised operation.

The usual post-auricular incision was made, carrying it well forward over the zygomatic root. The cortex of the mastoid appeared bluish, but no fistula was present. The antrum was located, whence a discharge appeared corresponding to that recovered from the middle ear the day before. The cortex of the mastoid was quite soft, and with a curette the entire outer plate was readily removed. The mastoid cells were broken down and contained masses of granulation tissue. The inner plate over the lateral sinus was necrotic and a large exposure

of the lateral sinus present. Working upward and forward the bony cells were many and led into the root of the zygoma. The squamous plate above was quite necrotic, as was also the tegmen antri, giving us a large exposure of the dura. The sub-temporal region was explored, but the bone was found intact and the soft structure over it œdematous. The wound was packed with iodoform gauze and sutured at the angles. The day following the operation the temperature did not exceed 99 degrees F. The swelling of the face disappeared. Four days later the temperature reached 101 degrees in the evening and the swelling of the face and eyelids recurred. The wound was inspected and found clean. The temporal swelling remained the same, but the parotid region was also swollen. This condition remained unchanged until four days later, when the swelling in the temporal region subsided and we now had a localized swelling in the parotid with deep fluctuation. The next day under anaesthesia we opened into the parotid gland, evacuating a large quantity of thick pus, which



Speciment of a temporal bone exhibiting extensive cellular development. Note extension of cells into the zygomatic process, a condition identical with the operative findings in cases two and four reported in this paper.

—From Anatomical Collection of Professor Gilbert J. Palen.

upon culture showed pneumococci. Twenty-four hours later the temperature dropped to normal and the swelling of the face and eyelids disappeared. The patient was discharged from the hospital four days later with granulating wounds. One week later the parotid wound had entirely closed and the mastoid wound was granulating very satisfactorily.

The character of the necrosis in this case gave us the impression of a tubercular condition. A von Pirquet was made, but the reaction was doubtful. The explanation of the swelling in the zygomatic region can be appreciated by inspecting this specimen from the anatomical collection of Dr. Palen, which shows to what extent we may find the development of the zygomatic cells. Suppurative parotitis, which complicated this case, is a rather rare occurrence.

The third case is that of a male patient, age forty-five years, who claimed good health until six weeks before his admission (January 28, 1915) to the Hahnemann Hospital, when he developed pain in the nape of the neck. This was worse in the afternoon about four o'clock. He complained of diplopia, loss in weight, anorexia, constipation and nocturnal urination. He denied lues, but acknowledged an attack of urethritis.

This patient was examined by Dr. W. L. Hicks, who found the pupils large and equal and reacting normally; paralysis of the right external rectus muscle; tongue deviating to the right; facial muscles normal; patellar reflex normal; Babinski negative; Gordon negative: superficial reflexes present and active; plantar normal. Examination of the eyegrounds by Dr. Tindall showed paralysis of the right external rectus; pupils react to light. The fundus presented nothing pathological. Dr. Sappington reported a negative Wasserman and a leucocytosis of 30,000.

The temperature during the next two or three days ranged between 100 and 101, with a pulse of 80 to 90.

On January 31st he complained of fulness in the right ear without pain, but the hearing was dull. At this juncture we were asked to see the patient. Upon examination we found the right membrana tympani opaque, thickened and bulging. There was no mastoid tenderness or swelling. Under local anaesthesia we made a free incision in the right drum, evacuating a quantity of thick, creamy purulent secretion which cultured yellow staphylococcus.

Dr. J. W. Frank made stereoscopic roentgenographic studies of the right mastoid and reported a necrosis of the cells about the canal.

The ear continued to discharge freely a thick purulent discharge. The diplopia cleared up and the patient felt generally better. The temperature now ranged between 99 and 101. The differential blood count February 1st revealed leucocytes 16,000, polynuclear percentage 80. The ear continued to discharge quite freely, and on February 6th Dr. Palen explored the right mastoid. There was marked necrosis of the cells about the antrum, but the tip cells were normal. The inner plate over the lateral sinus was extensively necrotic, as was also the tegmen. Here a large exposure of the dura presented, in the center of which was a dimpling with a teat-like projection. This was incised, but nothing followed. The day following the operation the patient was bright and the temperature did not exceed 99.4, pulse 80. Two days later the temperature rose to 101, with a pulse of 90, the breath became very offensive, and the patient had transitory periods of delirium with drowsiness. On February 10th the patient was very drowsy, sleeping most of the time. At this time he presented marked Kernig on both sides, Babinski and ankle clonus, with loss of power on the left side of the body. He was again operated February 11th, Dr. Palen exploring the middle fossa and sub-dural space, but nothing was found. The patient regained consciousness, but became progressively weaker, developing dysphagia and aphasia and finally died on February 19th. Unfortunately autopsy was refused and the exact structural changes will never be known.

This case illustrates the extensive changes which can and do occur in the mastoid with little external manifestation.

The fourth case is that of a well-developed, robust man of fifty-four years, who came to us March 20th, his chief complaint being discharge from the right ear for the past ten weeks and headache confined to the right side in the temporal region. Ten weeks ago, subsequent to a cold in the head, pain appeared in the right ear, followed twelve hours later by discharge, tinnitus and dull hearing. During the last ten days he has had right temporal headache. There has been no vertigo or sensitiveness to light, but at times chilly sensations with sweating. He has been under the care of a physician, who ordered syringing the ear.

Upon examination we found a swelling in the right temporal

region, apparently beneath the temporal muscle and extending to the root of the zygoma. This swelling was hard and there was no fluctuation. There was no swelling over the mastoid, nor was there any tenderness except directly over the root of the zygoma. There was a profuse muco-purulent discharge from the ear. The posterior-superior wall of the canal was sunken so that it was impossible to inspect the drum. Rinné's test showed shortened aerial conduction; Weber's test was referred to the right ear. There was no spontaneous nystagmus. There were no neurological signs. There was some conjunctival suffusion, but Dr. Tindall reported the eyegrounds normal. The temperature was 100, pulse 90. He was operated immediately. Upon exposure of the mastoid cortex through post-auricular incision, a peculiar bone-formation was noted. It appeared as a reduplication of the mastoid tip, one tip superimposed upon the other. The cortex was intact. The antrum contained free pus and granulations. The mastoid tip was a large pus cavity. In working forward and upward there were found large broken-down cells in the zygomatic root. There was a large defect in the tegmen, extending well inward over the middle ear. Here the exposed dura was covered with dark granulations, and in order to follow the necrotic inner plate a radical mastoid had to be performed. After removing the bony posterior wall of the canal, the area of infected dura was found to be quite large and at one point, well forward over the middle ear, there was a break in the granulations. This was gently probed, when it was found that the probe passed into the brain substance. A grooved director was introduced and immediately a quantity of thick pus escaped. This subsequently cultured pneumococci. After thoroughly evacuating this cavity a drain was introduced, the wound packed with gauze and sutured at the angles. The temperature during the next two days fluctuated between 98 and 100 degrees, with a pulse of 78 to 90. He was comfortable, the headache having entirely disappeared. On the fifth day the temperature was 100. The wound was inspected, but no pus could be found. The convalescence from this time on was uninterrupted and the patient was discharged from the hospital on the twenty-first day after the operation. He continued to do very well until May 3rd, when he became light-headed and drowsy; vomited; had temporal headache; the right pupil was dilated and fixed and the veins of the fundus of the right side appeared slightly larger than the left.

There was a left-sided facial paralysis and marked weakness of the left side of the body. May 6th we again explored the right middle fossa, but we were unsuccessful in locating further abscess. A few days later, during a redressing, we again explored the temporal lobe and recovered pus, but not in large quantities. The patient became rapidly asthenic and died ten days after the second operation. Dr. Sappington performed a post-mortem, at which time he found basilar meningitis and upon sectioning the brain, a very large temporal lobe brain abscess.

2102 Chestnut Street.

A VACATION IN CENTRAL AMERICA

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In these days when the cry is "See America First"—and good advice it is, since it is almost impossible to see any other part of the world without imminent risk of getting your head blown off—Americans are beginning to realize that, after the glamour of an European trip has worn off, we have just as many beautiful sights, just as interesting countries, almost as much ancient history, just as polite people, and a lot more red tape right here in our own hemisphere than they have across the water. For those who are contented to visit Florida and spend their winter vacation on the veranda of a Flagler hotel, or California, and spend it in the luxury of motoring on some of the best roads on the continent, this article is not written, since it is intended not to be entertaining but merely a practical talk to those who may want to take a vacation outside of the United States this winter and who have some thoughts of visiting the, to us, little known countries of Central America. To such it is hoped this little article may be the means of deciding whether it is "to go" or "not to go," and if the former, that it may settle in their minds some vexed questions as to "how."

In the first place, if you cannot be happy without the comforts and good eats of a first-class hotel, a good ship and good trains, don't go. If little things like ants walking over your food, being chewed incessantly by jajenas and sleeping on beds without mattresses are not to your liking; if it annoys you to have a customs-house nigger go painfully and slowly through every little nook and corner of your baggage while you keep one eye on him and one on the only train for the day, which leaves in fifteen minutes—then see the train pull laboriously away without you, and two minutes later have him quickly finish his examination and tell you *"Esta bien,"* and when you angrily remind him that the train is gone, have him with a broad grin point you to a thing called a hotel (which he owns), where you can spend the day and night; and such a hotel (God help us!); if these things, repeated several times, worry and disgust you, you are in no frame of mind to enjoy some of the most interesting countries I have seen. But if you are philosophical enough to consider these things but

little flaws in a picture otherwise perfect in its setting; if you love sunshine and warmth and tropical nature; especially if you are as fortunate as we were in having a niece living there who with her husband and his family spared no pains to make our visit the pleasantest imaginable; if you have at your command the best horse in the country and half a dozen darn good-looking girls ready to go romping over the country with you, and ready with infinite patience to explain everything, you will have a vacation really worth having.

If one wants to go to South America he has little trouble in finding routes and rates and securing accommodations from any reliable agency in any of our larger cities. Of Central America they seem to be entirely ignorant. Even the United Fruit Company, whose boats visit its eastern coasts, give you but little satisfaction as to the best means of reaching points other than those at which they stop. The Pacific Mail Steamship Company (and one must distinguish well between the "Pacific Mail Steamship Company" and the "Pacific Steamship Company") from San Francisco, the only available line of boats on the west coast except the local Salvador Railway Line, can give you no other information than that they will probably be at certain ports on a certain day and will land and take on passengers if health conditions permit.

Sailing for the east coast the fruit steamers leave New York regularly for Colon via Kingston or Havana. Another set leave New Orleans for Colon direct or via Havana, and still another set leave New Orleans and call on their way south at various ports on the east coast of Central America; at Belize in British Honduras; at Puerto Barrios in Guatemala, where rail connections are made for Guatemala City and San Josè on the Pacific Coast, and at Bocas del Toro in Costa Rica, where rail connections are made for San Josè, the capital, and Punta Arenas, the Pacific port of Costa Rica. On the west coast the Pacific Mail Steamers running between San Francisco and Balboa, the port of Panama City, stop in both directions at fairly regular intervals, at all the important points on the west coast of Mexico and the Central American States.

Personally our objective point was Chinandega, Nicaragua, and we chose to sail from New Orleans rather than New York to avoid the mid-winter Atlantic trip. From New Orleans the trip is five days to Christobal, the port of Colon, without a stop—unless one goes by

way of Havana—except at Swan Island, where the Fruit Company maintains a high-powered wireless station. The boats of the Fruit Company are comfortable and clean and the food and service excellent. They serve a drink on board the fruit boats I have never seen elsewhere—"Banana Nutro." I am sure it is one of the results of Burbank's experiments and tastes as though he had crossed an Ajax plug with the poorest grade of fine cut. However, it is nectar to some of the stuff one gets later, so it is good policy to accustom yourself to it. We arrived at Colon on the hour and after having our temperatures taken to assure Uncle Sam we were in a normal frame of mind and peaceably inclined, we were allowed to land in the famous Canal Zone. Colon is worth spending a day in, but you want to spend the day in the swimming pool back of the Washington Hotel if you really want to enjoy it. When you land, right away get one of the ten-cent cabs and drive about the town for an hour, then beat it as fast as you can for the pool. In the evening come out and get one of the best dinners you ever ate at the Washington. Then visit some of the Chinese stores and bargain for curios or a suit of silk pajamas. Take note that the town is under control of the Panama government, but the only Panamanians are the policemen and the cab drivers, the rest are Americans, Jamaica niggers and Chinese.

At present, in going across the isthmus, it is almost impossible to get transportation through the canal unless one is on a through boat to South American ports or San Francisco, but the railway follows the canal line closely so that it is in view practically all the way to the west coast and one can stop off and investigate at any point desired, although at the present time Uncle Sam is spending some money on fortifications and defense, and visitors are not very welcome. Panama City is worth spending a couple of days in at least, and the Tivoli is a very comfortable hotel. From here, north, we take the Pacific Mail. It is not ordinarily necessary to engage passage until one arrives at Panama City. The staterooms are all one price and the best accommodations are allotted to those going the farthest. The only thing to remember is that the time of sailing, that is the hour, is liable to change without notice. Our boat was due to sail at three p. m. I arrived at Balboa at nine a. m. to engage accommodations and found the boat already under way. It was finally held two hours for us until I could find Mrs. Phillips. The boats are poor, only one of

them, the Newport, being really passably good. All are boats used twenty-five or thirty years ago on the China line and having been condemned for deep sea travel are now used in the coast service. A big derrick fell on the Newport a year ago while at anchor in Balboa, crushing in all the superstructure. The dock company was compelled to repair the boat, which accounts for its being now so much better than the rest.

Going north, or rather south, since for about three hundred miles after leaving Balboa the course is southwest, the first stop is at Punta Arenas in Costa Rica. Here one can land and have five to seven days between boats to go up to San Josè and take the railroad east to any point as far as Bocas del Toro on the east coast. Costa Rica is the most advanced and stable republic in Central America and San Josè is said to be a beautiful city. We expected to return via Costa Rica, but owing to illness, missed our boat, so we cannot speak personally of conditions, but all Central Americans and the people we met who had come from Costa Rica spoke very highly of the country. The next stop is San Juan del Sur, in Nicaragua, a beautiful little port presided over and practically owned by an old German, who came there sixty years ago. San Juan del Sur is the cable station at Nicaragua, but has no railway communications.

Next we come to Corinto, the chief port of Western Nicaragua, and the railway terminus. Here we landed. One is now in the real Central America, the land of the "palm and mañana." It does not matter to the very important colored customs official whether you get the train today, tomorrow or some time next week. The sun in January blisters everything it strikes and the dust in the roads rises in clouds. The stately palms, the plantain orchards, the wild jicoras or gourds, which at first deceive you into believing you are in the midst of a wild orange grove, the people, the buildings and all, remind you at once that you are in the tropics, and in a country, too, primitive and unspoiled by tourist traffic. The Central Railroad of Nicaragua connects Corinto with the four chief cities near the west coast—Chinandega, Leon, the capital Managua and Granada on Lake Nicaragua. All other travel here is by horseback or muleback or in ox-carts. Our stopping point was Chinandega, twenty miles inland, and here we were met by our friends, and Chinandega and the farm San Jeronimo six miles out was our home for six weeks. All of these towns are worth

seeing and if not viewed in too hypercritical a manner are very interesting.

If one has the time he should take a ride into the interior. I went one hundred miles to the northwest on horseback with my niece's husband to visit their big plantation on the bay of Fonseca. The ride was through the woods, across plantations and jicora plains and salt beds. We shot game, wild turkeys, partridge, etc., and fished on the way. The woods are full of game; deer are abundant, foxes, wild chicken, wild turkeys, wild cats, partridge, monkeys and parrots can be seen at almost any time. The woods themselves are very interesting with their immense mangrove swamps, the great jiniceros, juanacastas, cedars and mahoganies, and the deadly matapalos, the garroters of the forests, which wrap themselves about the biggest trees and, like great cuttle fish, with their thousand feelers buried deeply in the bark of the doomed tree slowly strangle it to death. I was thirsty one day in the woods and one of the natives with us stepped up to what looked like an immense grapevine and with his machete cut off a section and showed me how, by holding it upright, one could obtain from it a cup of the purest water. The plantations with their orange trees, their banana and plantain groves, their bread-fruit trees, avocates and innumerable other fruits of which we never hear in the north, their sugar cane, coffee bushes, etc., are attractive to the stranger. The woods are alive with "ticks" and "red bugs" and one should carry with him some tincture iodine with which to paint these critters when they bite, for not a few of the so-called "simple continued" and "relapsing" fevers of these countries are due to tick bites, as the writer can testify from personal experience after his trip through the woods.

One can not leave a Central American country without the written permission of the commandante of the port from which he sails or, as in Nicaragua, from the President himself, and the same baggage examination is gone through with as when entering. All this should be attended to long enough ahead to allow for the *mañana* proclivities of these people, or one is likely to miss his boat or train. Having had a run of their so-called seven-day fever with a temperature of 105 degrees for a week, a crisis, and a subnormal temperature from 95 degrees to 96 degrees for two weeks more, we missed the Corinto boat by which we intended to return home via Costa Rica, and took

a later boat north, returning through Guatemala. The boat stops three times on the Salvador coast—at Amapala, La Libertad and Acajutla—giving opportunity to go up into Salvador or cross over to Honduras before reaching San Josè de Guatemala. At San Josè we had a real taste of Central American methods. We landed at eight and the train for Guatemala City left at nine. There were about twenty-five of us and the Commandante deliberately held us up on inspection until the train had gone (the only one for the day) and then collected ten pesos apiece from the hotel keeper, which was charged up to us, for the job.

From San Josè one goes by rail to Esquintla, the beginning of the long climb of five thousand feet to Guatemala City. Here two hours wait is necessary for the train from the north which goes to Guatemala, during which time one can get a very good dinner and see a typical Central American town. The ride from Esquintla to Guatemala is very picturesque and one becomes rapidly conscious of a change in atmosphere and temperature as he climbs on up. Guatemala is five thousand feet above the sea level, clean, comfortable and has a delightful climate. There are tennis courts, a golf course and a country club, and just outside the city are many interesting old ruins. From Guatemala east the railroad is now complete, the first thirty or forty miles being a piece of difficult engineering, and some of the grades are pretty stiff. Until four or five years ago this part of the road had to be negotiated on muleback, the cost of completing the railroad through the gorges and mountains being considered prohibitive. The last half of the journey is through the banana plantations of the United Fruit Company—miles upon miles of banana trees or jungle so dense one cannot see into it, where the land has not been cleared Puerto Barrios, the eastern terminus, belongs practically to the Fruit Company, and the town itself is made up wholly of Jamaica niggers employed on the plantations and in loading the steamers. One has to stay here over night, but the hotel is fairly good and the food eatable. The steamers from here to New Orleans are small but comfortable. But one stop is made, aside from gathering mail, at the pretty little English town of Belize in British Honduras, where chicle is loaded, and then back to New Orleans. It takes two weeks with the best connections to reach Corinto, and exactly the same period of time from Corinto back, whether one returns through Guatemala

or Costa Rica.

United States money, especially United States currency, is accepted everywhere. Gold or silver coin, especially in Nicaragua and Guatemala, is an unknown quantity. In Salvador and Costa Rica it can be obtained and is rated at fifty cents on the dollar. In Nicaragua, besides United States money, which is always denominated "gold," there are two grades of money, "billete," or the paper money of the country, which is exchanged for American money at fourteen to one, and "cordoba," the money put out by Brown Brothers, who control the railway and customs in the country, and which is valued at eighty-eight cents on the dollar. This is a damnable crime and a blot upon the fair name of the United States, for Brown Brothers issued this at par and agreed to maintain it at par, and Brown Brothers are backed up by the United States marines and gunboats. In Guatemala the "billete" is rated at varying figures, from twenty-five to one in San Josè, to thirty-six to one in Guatemala. The steamship companies accept only United States money; the railroads accept either, but with a decided preference for United States currency. Express checks and bank checks are accepted at par with United States currency.

No firearms or ammunition of any kind can be taken into the country and import duty is levied on practically everything except personal wearing apparel. Export duties, too, are levied on many things. United States passports are not needed to get into the country, but a local passport is an absolute necessity to get out of it. Much could be said here that would be of interest regarding the people, the customs, the political conditions and medicine in Nicaragua. I had the pleasure of knowing professionally one of the best eye men in Central America, Dr. Gastazorra, formerly of Chinandega, now of San Salvador, having been driven out of Nicaragua by ex-President Zelaya for political reasons. Also through my illness I came to know several of the best men in general work in Chinandega and vicinity. A large medical university is established at Leon, where excellent teaching is done. But time and space forbid, and besides, it is much more interesting to go see these things for yourself.

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HOMOEOPATHIC MATERIA MEDICA AND THERAPEUTICS*

OCCIPITAL AND CERVICO-OCCIPITAL HEADACHES

AUGUSTUS KORNDŒRFER, M. D.

Related as they are to such varied causative factors as eyestrain, middle ear disease, adenoids of the pharynx, gastric and intestinal indigestion, myalgia or neuralgia of localized origin, uterine disease, neurasthenia; diseases involving the meninges or the brain substance, such as meningitis, epilepsy, cerebellar tumors and other lesions, and frequently also occurring during the course of acute febrile diseases, these forms of headache are well worthy our most careful study.

When speaking of the medical treatment of these conditions it is taken for granted that all exciting causes will first be removed; thus errors of refraction must be corrected, errors of diet avoided, adenoids if unyielding to constitutional treatment, surgically removed, etc. In a word, all physical, mechanical and hygienic corrective measures employed as indicated; then the dynamic weakness that has made possible the headache may be overcome by the appropriate dynamic remedy.

The most important of these agents are: actæa racemosa, ammonium picricum, avena sativa, belladonna, bryonia, cinchona, cocculus, gelsemium, glonoine, ipecacuanha, juglans cinerea, oxalic acid, petroleum, phosphoric acid, picric acid, rhus radicans, sanguinaria, sepia, silicea, sulphur, veratrum viride, zincum.

Next in importance may be mentioned: aesculus hippocastanum, ambra grisea, apis mellifica, calcarea carbonica, calcarea phosphorica, carbo vegetabilis, chelidonium majus, fluoric acid, ignatia, kali bromatum, kali carbonicum, kalmia latifolia, natrum muriaticum and nux vomica.

Although probably less frequently indicated we must also call attention to arnica, capsicum, causticum, crotalus, ferrum, helonias, kali iodatum, kali phos., lobelia inflata, lycopodium and sarsaparilla.

According to causative condition, compare the following: for

*Read before the Hahnemann Club.

Eyestrain: act. rac., bella., calc. c., gelsem., kalmia, lachesis, natr. m., phos. ac., sepia, spigelia.

Middle ear disease: bella., calc. c., carb. veg., caust., fer. phos., gelsem., laches., lycop., nux vom., phosph., silic., sulph.

Adenoids: apis, bella., calc. c., calc. ph., carb. veg., caust., fluor. ac., ignat., kali c., laches., lycop., natr. m., nux vom., petrol., phosph., sarsap., sepia, silic., sulph.

Myalgia, Neuralgia, etc.: act. rac., apis, bella., bryon., calc. c., calc. ph., caust., chelid., gelsem., kalmia, laches., lycop., natr. m., nux vom., petrol., phosph., rhus rad., sulph., verat. vir.

Uterine and ovarian affections: act. rac., ambra, apis, avena, bella., calc. c., coccul., gelsem., ignat., kali brom., laches., lycop., natr. m., nux vom., phosph., secale, sepia, silic., sulph.

Gastric and intestinal indigestion often causing such occipital headaches may require any of even a much larger list of remedies.

The principal symptomatic indications are as follows:

Actæa racemosa. Nervous women inclined to become depressed in spirits without assignable cause. Giddiness and an undefined strange feeling in the head. Great fullness of the head (this is very characteristic and may be a guiding symptom after suppression of uterine discharges). The pain in the occiput is intense; it feels as if "a ball" were driven from the suboccipital region to the vertex. In eyestrain we may have an accompanying ciliary neuralgia which is worse at night, though better when resting and when lying down.

Ammonium picricum. Periodical neuralgia in the right side of the occiput. Boring pain extending to the ear, orbit and jaw. Vertigo on rising. Irregular menstruation.

Avena sativa. This remedy is useful in severe pain at the base of the brain, especially in cases characterized by nervous exhaustion and insomnia. The tincture usually has been employed.

Belladonna. Intense pain especially violent at the base of the brain; the head may be drawn backward. Cutting pains in the occipital protuberances. Lightning-like stabs of pain behind the ear. The pain begins suddenly, continues a greater or less time, and ceases as suddenly as it began. The pains are accompanied by great fulness of the head or at the base of the brain, throbbing of the carotids and redness of the face. Aggravation from the slightest noise and from light.

Bryonia. In the morning in bed after waking, while lying on the back, headache in the occiput, pain extending to the shoulders. Pressive pain in the occiput drawing down into the neck, in the morning, relieved toward noon.

Cinchona. Headache from the occiput over the whole head from morning till afternoon; worse lying down; must stand or walk; drives to madness. Headache in the occiput after sexual excesses or onanism.

Cocculus indicus. Pain in the occiput extending down the spine. Can not lie on the back of the head, must turn on the side. Headache induced by riding in a carriage, car or boat. Thinking fatigues the head. Sick headache, nausea, violent vomiting and cramps in abdomen. Headache better indoors and from rest. Menstrual headache with vertigo and nausea. Brain-fag with feeling of emptiness in the head, pain in the occiput "as if opening and shutting."

Gelsemium. Pain at the base of the brain, worse at night. Nervous headache beginning in the cervico-occipital region and spreading to the whole head. Dull headache mainly in the occiput and cervical region. Bandlike pain mostly in the occiput, with muscular soreness of the neck, pain extending even to the shoulders and spine. Obscuration of sight or double vision precedes the headache. Headaches during the climacteric period. Headache in meningeal troubles, extreme tenderness in the occipital region aggravated by the slightest motion. Headache better from copious micturition and after sleeping.

Glonoine. Pain in the occiput extending to the eyes and temples. Beating in the head from the occiput to the forehead, as if everything would crowd out at the forehead; must lie with the head and trunk high. Pain seems to rise from the cervical region through the occiput. Feels as if "would lose reason." Throbbing in carotids. Especially useful in congestive headaches. Headache after exposure to the heat of the sun. Headache worse from motion; better from bandaging the head.

Ipecacuanha. Tensive headache in occiput and nape of neck, extending at times to the shoulders. Headaches usually of gastric or malarial origin and frequently begin with nausea and vomiting. They occur mostly in nervous, sensitive persons, especially in women who suffer from profuse and painful menstruation.

Juglans cineria. Recommended by Jeanes for occipital headache; the pains are intensely sharp and shooting in character and frequently

are associated with hepatic disturbances.

Oxalic acid. Has been recommended for a short linear pain in the occiput, or at a spot between the vertex and occiput. The most characteristic indication is found in the modality "as soon as he thinks about the pains they return."

The oxalic acid patients are found among the brain workers rather than among manual laborers.

My experience with this remedy has been far from satisfactory.

Petroleum. Heaviness in the occiput. Pressure and sticking pressure in the occiput, in the morning. Pinching and dull pulsating pain in the occiput. Circumscribed pain in the occiput, worse on shaking the head. Pain from the occiput over the head to the forehead and eyes, with transitory blindness. Occipital headache with nausea. Vertigo on rising, often with bilious vomiting.

Picric acid. Headaches of students and overworked business men; or when grief or other depressing emotions have resulted in nervous exhaustion. Pain in the occipito-cervical region. Brain feels too large for the skull. Pain worse from artificial light; better from tight bandaging and from fresh air. The slightest excitement or mental exertion, or any form of overwork, brings on the headache.

A frequent accompaniment is a sense of heaviness of the legs "as if they were made of lead."

Rhus radicans. Pain in the occiput and nape of the neck. Darting pains in the head. Quotidian periodical headaches. Headache worse and the pains sharper in character when lying down. Throbbing and heat in the head. Sense of fulness in the head. The headache is relieved by rest, though the patient feels the restlessness and desire for motion so characteristic of rhus. The pains are aggravated by cold and are relieved by warmth. These headaches are frequently observed in typhoid fever, catarrhal fevers, and after overtaxing the brain through study or business.

Sanguinaria. Pain beginning in the back of the head, spreading over the head and settling over the right eye; the pains are sharp, lancinating, at times throbbing; patient can not bear either sounds or odors; the slightest jar is annoying; vomiting of food and bile; must remain quiet in a dark room, sleep finally brings relief. Dr. Lippe always spoke of sanguinaria as the "American sick-headache remedy."

Sepia. Although more frequently indicated in hemicrania, sepia

has also a pulsating headache in the cerebellum beginning in the morning and lasting till noon or at times till evening. It is aggravated by the least motion, even from turning the eyes; also worse from lying on the back. Amelioration from lying on the side, when closing the eyes and when at rest in a dark room.

Silicea. Headache or a cold feeling rising from the nape to the vertex; shooting pains from the nape to the vertex, or from the occiput to the eyeballs, especially the right eyeball. Chronic headache, the pain extends from the cervical vertebrae to the occiput and then to the forehead; pain worse from light, noise, the least jar, from odors and from motion of the head. Better from wrapping up the head warmly, and after sleep. Periodical headache, every seven, fourteen or twenty-one days. Headache from excessive mental exertion. Vision obscured after headache.

Sulphur. Sensation of emptiness in the occiput; or we may have heaviness in the head particularly in the occiput. Pain extending from the forehead to the occiput. Headache at night, worse from the least motion in bed.

The vertex, however, is the location most commonly affected by sulphur, the guiding characteristics being heat on top of the head with flushes in the face accompanied by coldness of the feet.

Veratrum viride. Headache from the nape of the neck, with vertigo, dimness of vision and dilated pupils. Heat and fulness from the nape of the neck to the forehead with throbbing of the cerebral vessels and the carotids. Congestive headache from suppression of the menses; intense congestion accompanied by violent nausea and vomiting. Hyperæsthesia of all the senses.

Zincum. Chronic occipital headache, the pain extending at times to the eyes; great weakness; weight on the vertex; scalp feels sore; feeling in the occiput as if stunned; stupid feeling during the pain; brain-fag; nervous exhaustion; chlorotic patients after the excessive use of iron.

Though less frequently indicated the following remedies are still quite important:

Aesculus. Dull pain in the occiput with flushes of heat over the back of the head, neck and shoulders. Usually occurring in cases marked by abdominal plethora with hemorrhoidal involvement.

Ambra. Pressive pain in the occiput and nape of the neck. Dull

oppressive feeling or sense of confusion in the occiput. Often indicated in nervous, excitable patients.

Apis. Violent drawing from the back of the neck, extending to behind the left ear and spreading over the left half of the head. Aching in the occiput, increased by shaking the head.

Calcarea carb. Headache beginning in the occiput and spreading to the top of the head, so severe that she thinks "the head will burst" and that she will "go crazy."

Calcarea phos. Aching, drawing pains around the lateral protuberances of the occiput (these pains probably are along the occipitomastoid suture), pain along the sutures of the skull being one of the most characteristic symptoms of this remedy. The pains are aggravated from changeable weather. Calc. phos. is frequently indicated in the headaches of schoolgirls.

Carbo vegetabilis. Dull headache in the occiput or a violent pressive suboccipital pain. This symptom may occur after a debauch characterized by hard drinking and nightly carousing. Too often the reputation of nux vom. leads us to forget the value of carbo veg. in these cases.

Chelidonium majus. Heaviness in the occiput with pressure in the left ear. Coldness in the occiput rising from the nape of the neck, aggravated when moving, but better during rest. The pain is not intense but the cold sensation is characteristic. Chelidonium is best indicated in thin and irritable patients disposed to abdominal plethora, catarrhs and neuralgias.

Fluoric acid. Headache in the occiput with fulness in the head. Headache in a sharp line behind the ears, as if following the occipitomastoid suture. Fluoric acid often follows silicea well.

Ignatia. Throbbing pain in the occiput, much aggravated when straining at stool. Pain in the occiput worse from cold, better from heat and from rest; better while eating but worse soon after.

Deep-seated stabbing pain in the eyes, going to the occiput and nape of the neck, and finally to the vertex; the pain is very acute, driving him almost frantic. Pain beginning in the morning on rising, is at its height at 4 p. m., and passing off after a night's rest.

Kalmia. Pain, neuralgic in type, spreading from the back of the neck up over the scalp to the vertex and temples, also affecting the face especially on the right side. Scalp and face tender to the touch.

Pain relieved by cold and aggravated by heat.

Nux vomica. Intense occipital headache in the morning after rising. Pressure as if the skull would burst; dizziness; pain in the eyes. The usual gastro-intestinal or hepatic symptoms of nux vomica accompany these headaches.

As before suggested, many other remedies present in their pathogeneses such occipital headaches and may prove important in certain well-defined cases in which the totality of the symptoms lead clearly to the choice, but where the occipital headache is the most characteristic and impelling symptom the foregoing lists will usually be found sufficient for the selection of the curative remedy.

Fireproof your children's (play) clothes by soaking in or sponging with a solution of ammonium phosphate—one pound in a gallon of water—which costs about twenty-five cents a pound. This harms no cloth that is not hurt by plain water.—C. F. Pabst, M. D.

CORRECTIONS

Mr. Editor:

When reviewing the "Red Directory" of homoeopathic physicians in and about New York in the May issue of this Journal I stated that Drs. Sutton and Sidney E. Smith were dead. It is a pleasant duty to correct this error.

Dr. Ralph I. Lloyd writes that he has "conversed with Dr. Smith and is assured by others that Dr. Sutton is alive." With his inimitable humor Dr. Lloyd adds: "The anticipation of the inevitable might be corrected by placing these two gentlemen among the graduates of the present class and giving them a fresh start in life, thus avoiding an acknowledgment that a publication is ever in error."

But *magnus est veritas et prevalabit,* so I will not attempt to make a bad matter worse—John L. Moffat.

We regret that there was an error in placing two of the figures illustrating Dr. Gilbert J. Palen's paper, "The Tonsil Operation"—concluding article in the July symposium on "The Faucial Tonsils." Figures 5 and 6, on page 623, have been interchanged. To understand the descriptive texts beneath the illustrations, the figure now at the bottom of the page should be placed at the top and the other one below. The descriptive texts would then each be under the figure to which it belongs.

ABSTRACTS

Das Glaucom der Jugendlichen. (*Aus der Tübingen Universitäts Augenklinik.*) Löhlein in his Arbeit on "Das Glaucom der Jugendlichen" (Graef's *Archives für Ophthalmologie,* Band 85, Suite 393) collected ninety-two cases of primary glaucoma occurring under the age of forty, and arrived at the following conclusions:

It can be concluded with certainty that there exists a class of cases of juvenile glaucoma that corresponds to senile glaucoma and which cannot be distinguished from the same; whereas in the other group of cases of juvenile glaucoma, as well as in congenital hydropthalmus, the disease is acquired through congenital malformation. The question whether juvenile glaucoma occupies a peculiar position with regard to senile glaucoma was taken up by Löhlein, but was not answered except in a statistical way. According to Löhlein primary glaucoma is three thousand times more likely to occur in the seventh decade than in the first decade, about one hundred and fifty times more likely than in the second and only forty times more likely than in the fourth decade. Schleich reports his statistics of the Tübingen Eye Clinic. As far as frequency is concerned he finds that in the seventh decade glaucoma was about three hundred and thirty-seven times more frequent than during the first decade, seventy times more frequent than in the second decade and thirty-four times more frequent than in the third. In regard to juvenile glaucoma the following list gives us an idea of the age and frequency of occurrence.

Age	0–5	6–10	11–15	16–20	21–25	26–30	31–36	36–40
Male	0	4	2	5	1	11	10	33
Female	0	1	1	4	8	8	12	34
Total	0	5	3	9	9	19	22	67

Regarding unilateral involvement, the right eye was affected eleven times; hence no predisposition to this disease of one eye more than the other could be determined.

These tabulated cases exclude hydrophthalmus.

It will be noticed that there were no cases of primary juvenile glaucoma during the first five years of life; other observers have also noted this.

Again, these statistics vary considerably from those of Löhlein, who emphasizes the years between fifteen and twenty-one as the time for the greatest frequency of glaucoma. As to sex, thirty-three men to thirty-four women was the proportion, but the number of women predisposed to juvenile glaucoma is greater between the ages of twenty-six and thirty. Juvenile glaucoma simplex occurs only one-half as frequently as juvenile inflammatory glaucoma.

Concerning refraction, the following table will give an idea of Schleich's statistics.

Age	0–5	6–10	11–15	16–20	21–25	26–30	31–36	36–40
Hyperopia	0	0	0	3	4	13	11	..
Emmetropia	0	7	1	8	2	13	15	..
Myopia	0	0	2	6	9	7	10	..

As the statistics show, one-third of the cases of juvenile glaucoma had myopic refraction; one-sixth of these cases had a refraction of more than six D. The majority, however, possessed emmetropic refraction (forty-one per cent.); hence, juvenile predisposition to glaucoma because of hyperopia cannot be accepted as true. On the contrary, only one-fourth of the cases had hyperopia and two-fifths were emmetropic before the twenty-sixth year, yet the number of myopic eyes before and after this year is so pronounced that Schleich concludes that myopic eyes are more predisposed to juvenile glaucoma than emmetropic or hyperopic.

Hereditary forces seem to exert no appreciable influence. Congenital anomalies were frequently found associated with juvenile glaucoma. Prof. G. B. Schleich. *Klin. Monatsblatter f. Augenheilk.* February, 1915. Frank O. Nagle.

Some Experiences with the Intranasal Partial Resection of the Tear Sac.—J. Sheldon Clark, *Chicago Ophthalmological Society*, December, 1914.

The writer states that "In other parts of the body surgeons have succeeded in healing diseased structures by making passes, thus removing irritation; and once this is secured the pathologic condition soon disappears. You have instances of this in their work on the stomach, the gall bladder, etc. In the past what has caused surgeons to remove the lacrymal sac for disease of that structure? The idea in most cases was to get rid of a focus of infection.

"The probe is of use in some cases of slight stenosis, either in the

puncta, the canaliculi, or the duct, but it is my opinion that where one has made an honest effort along this line of treatment he should desist when after three of four sittings there is no amelioration of the symptoms.

"In the use of the probe there is also a warning to be sounded regarding the immediate use of solutions under pressure, as it is very easy to get great infiltration of the tissues of the orbit where perchance there has been a slight injury to the tissues of the sac.

"There are contra-indications in my mind for the adoption of the intra-nasal route in all cases of tear-apparatus trouble. We will not limit ourselves simply to the sac, for many times there is no particular pathologic condition in the sac itself, but there is such in the nasal duct. First, as to general bodily tone. One should not choose a subject for this procedure who has a severe heart lesion, as the work must almost of necessity be done under local anaesthesia. All deviations from the normal within the nasal chambers should be well studied before suggesting the intra-nasal route. Disease of the frontal, sphenoidal and ethmoidal sinuses should be looked for and obliterated. Ozena is another condition that will militate against the success of the operation, for the very reason that of itself there is produced sufficient nasal blocking to prevent drainage and thus thwart us in our endeavor.

"What are some of the indications? Epiphora that is caused by stenosis in the nasal duct and that cannot be cured by a few judicious probings. Epiphora that is caused by trouble at the puncta or along the canaliculi, or by senile changes in the lids would naturally enough not be bettered by work on the floor of the sac. In dacryocystitis and dacryoblennorrhoea, in fistula and in cases of phlegmon there is indication for the window resection.

"It has been averred by Kuhnt and Bonn that disease of the ethmoid cells is the principal cause of dacryocystitis. This is wrong from the very nature of the relationship between the ethmoid cells and the lacrymal fossa. There is no direct communication between the ethmoid cells and the duct or sac. In one hundred and eighty-three operations performed by West he found polypi in the ethmoid cells in but three of the cases. This speaks greatly against the idea that ethmoid disease is largely the cause of sac and duct troubles."

The author here discusses the relationship of the ethmoid cells to

the lacrymal fossa, gives a history of the work on the duct by Caldwell in 1893, Seifert, of Wurtemburg, in 1899; Professor Killian, Passow at Heidelberg in 1903, and of West from 1910 to the present time.

"The aim of the operation is to short-circuit the duct and cause the tears to pass directly from the sac into the nasal chamber. The technique of the operation is divided into different steps by virtue of the variations that may occur in the anatomical relationships in different nasal chambers.

"If the septum is deflected so that it will in a considerable degree hinder one in getting a view of the field of operation, which is the floor of the sac, then a sub-mucous resection of the septum must be made.

"When the middle turbinate is large and the anterior end protrudes so as to cover the torus lacrymalis, then it is well to resect the tip of the middle turbinate anteriorly.

"The making of the muco-perichondrial flap. This flap has been very carefully outlined by West and in a number of instances should be made as shown in his illustration. * * * I have found in some instances that it is not necessary to make so extensive a preparation of the muco-periosteum; also that denudation of the parallelogram including within its borders the floor of the fossa lachrymalis has been quite sufficient. The idea of the extended incision is to aid one in getting a better view of the field.

"Resection of the edge of the processus pyriformis is made when that structure presses too much toward the median line, and thus shuts off view."

"What, then, may we expect from this resection of the tear sac intra-nasally?

"1. A functionating tear apparatus is the foremost attainment.

"2. There is no possibility of an external scar, nor does the patient or the doctor have a dread that there will be a resultant scar.

"3. There is no epiphora following the operation.

"4. There is no possibility of having to do a secondary operation upon the lacrymal gland on account of trouble from epiphora.

"5. Epiphora due to stenosis is readily cured by this procedure.

"6. No other procedure would admit of trial in the presence of phlegmon. With the intra-nasal operation one may operate where there is phlegmon without fear, and successfully.

"7. Patients with tear sac trouble are very much more apt to accept the intra-nasal route than they are the external operation for the total excision of the sac. I am free to say that I have found it so in my work." H. L. Gowens, Jr.

Limbal Puncture. David Priestly Smith. *The Ophthalmic Review,* February, 1915.

"It consists of a radial slit through the limbus, angle of anterior chamber and periphery of iris, into the vitreous." Speculum, fixation-forceps and Græfe knife are the only instruments needed. The patient is given a general anaesthetic. "Seize the ocular conjunctiva 3 or 4 mm. above the corneal margin and draw it down over the cornea until the limbus is peeled of its own conjunctiva and covered only by that stretched down from above. This traction also turns the eye down. Now puncture the eye at the limbus thus: Hold the Græfe with its back towards the visual axis and the blade aiming for the center of the globe, *i. e.,* perpendicular to the surface of the globe at the limbus, and pierce the globe to a depth of about 5 mm. Withdraw the knife and release the conjunctiva which then goes back into place and covers the wound in the limbus." In cases of a large cornea one must go up under the lid for a hold on the conjunctiva. Care should be had that the puncture is in the cornea and not in the sclera. The higher the table the better for the operation. "The knife should enter the eye until the parallel part of the blade is in the wall." For buphthalmos not as much care has to be taken as in adults where it is most necessary to avoid the lens. The writer found out of seventeen punctures in eleven eyes three favorable results: One absolute glaucoma, tension reduced from three to plus one; one late acute glaucoma, tension plus three reduced to normal, and one chronic glaucoma on which three other operations had failed.

H. L. Gowens, Jr.

Hexamethylamin to prevent sympathetic ophthalmitis. Dinkelspiel has "come to the conclusion that in certain well defined cases the drug acts almost as a specific." These are not the superficial ulcerations; the treatment is most satisfactory in cases where "shortly after a corneal injury there occurs turbidity of the aqueous, hypopion and involvement of the uveal tract." He gives 40 to 100 grains a day, in 10 grain doses, of hexal-sulfosalicylic hexamethylamin—with atropin and dionin locally. It has been demonstrated that hexamethylamin

is eliminated through the aqueous humor as formaldehyde.—*J. of O. and O. L.*, April, 1915. J. L. M.

The topography of the larynx. John A. Cavanaugh covers over ten pages of the April Journal of O. and O.-L. with a most thorough study of the anatomy of the human larynx, clearly expressed.

He finds ossification of the thyroid cartilage and of the posterior portion of the cricoid in almost all adult larynxes. The cricoid becomes ossified about the twentieth year. In some specimens he found it fused by a cartilaginous structure with the first and second tracheal ring. The thyroid begins to ossify about the eighteenth year.

The arytenoid cartilages are pyramidal in form only in their lower two-thirds; the upper third is flattened antero-posteriorly. One of these cartilages is usually a little larger than the other.

He holds that the movement of the arytenoids is mostly forward and backward, with some lateral motion that would open and close the glottis, and is not the outward and inward motion usually taught.

In many specimens the cuneiform cartilages were missing; in none could we see them with the laryngoscope.

He favors Lisser's classification of the muscles of the larynx proper.

Tension of the vocal cords is caused by (1) the cricothyroideus drawing the thyroid forward and downward (not by tipping the cricoid) and (2) by the thyroarytenoideus, which arises from the posterior surface of the thyroid close to the angle of the ala and is inserted into the greater part of the anterior surface of the arytenoid. He has not been able to distinguish any division of this muscle into external and internal parts, as some claim.

The larynx varies but little in size between the fourth and twelfth year. It is richly supplied with mucous glands, except at the vocal cords; they are especially numerous at the arytenoids, ventricles and base of epiglottis.

At birth the larynx lies between the lower border of the atlas and the middle of the fourth cervical vertebra; in the adult it extends from the middle of the third to the lower border of the sixth cervical vertebra—this varies according to the position of the head. The larynx of the adult male is about a third larger than that of the adult female, but after puberty the glottic aperture about doubles in length and breadth.

Our author believes that during the act of swallowing the larynx is carried upward and forward under the tongue and the epiglottis is pushed back over the aperture.

The chief site of swelling in laryngeal edema is the arytenoepiglottidean folds of mucous membrane, which extend (on each side) backward, downward and inward from the epiglottis and unite posteriorly to the aperture. Foreign bodies usually lodge in one or other of the recesses between these folds and the alae of the thyroid cartilage. This pocket, in the adult, is 18 to 29 mm. deep—down to the level of the false cords (about 6 mm. below the border of the thyroid notch).

Personally Dr. Cavanaugh does not believe that the function of the ventricle of Morgagni is to allow free vibration of the vocal cords.

The vocal cord, in transverse section, is wedge-shape, its free border looking inward and upward.

While suspending cases with the Killian device the greatest width of the glottis measured in adults 8 to 10 mm., in children 8 to 14 years old, during anaesthesia, 4 to 6 mm.; the length of the cord was 12 to 14 mm. It was difficult to get exact measurements because the cords would contract and relax with expiration and inspiration.

The vocal processes of the arytenoids are not attached at the acute angle of the cords, but about 3 mm. below. J. L. M.

Stammering is dependent fundamentally upon psycholical causes, it may be affected secondarily by rigid palate or adenoids. J. L. M.

Differentiate more carefully between choked disc and simple optic neuritis, then more cases will be recognized of intracranial pressure. J. L. M.

In suspected chronic glaucoma Dr. Edward Jackson many years ago suggested a tentative mydriasis. Euphthalium has been thus used with success. Deane (*Jour. of O. and O. L.*, April) reports dilating the pupil with euphthalium and homatropin in a case of suspected glaucoma; no increase of tension followed, but several months later he operated for *acute glaucoma*. J. L. M.

Silk drainage of the vitreous to Tenon's lymph space. (Derrick T. Vail, *Jour. O. and O. L.*, April). June, 1907, Mr. F. J. R., age 75, right eye blind and painful for three months from fulminating glaucoma. Pupil dilated and irregular—posterior synechia. Anterior chamber partly filled with blood, with blood stains on the posterior

surface of the cornea. Deep ciliary injection. Vision nil; tension plus 3; glaucoma absolute.

Dr. Vail passed a full curved sharp, short and broad needle armed with number 10 black silk plaited thread "on the whipcord order" through the conjunctiva in the lower outer equatorial region and about 10 mm. under the episcleral tissue, then boldly through the sclera in the region of the ora serrata, through sclera, choroid and retina, quite well into the vitreous chamber and then emerged about 8 mm. from its entrance in the sclera. Reintroducing the needle through the same conjunctival orifice the thread was led backward under the episcleral tissues for about 10 mm. before final emergence. The thread was drawn so that its end just disappeared in the entrance to the conjunctiva and clipped so that its other end disappeared at place of final emergence. This loop of coarse thread with its two ends was left to drain the hydrops of the vitreous into Tenon's space, "if it would."

There was little or no reaction from the operation itself, and no evidence of hemorrhage (!). The tension was relieved at once and remained so. The hyperemia and all signs of redness soon disappeared. Three months later, finding the result permanent and fearing to leave the thread in situ with the patient away from observation, it was removed. April 16, 1908, patient was seen and tension found normal.

Dr. Vail was afraid to repeat this operation because of the boldness of leaving a foreign body in the vitreous, but now the measure is recognized as valuable and safe. There is less danger of post-operative infection than with subconjunctival drainage at the limbus.

J. L. M.

Tonsils and nephritis. After finding evidence of chronic diffuse nephritis in the urine of a child he had never seen, Dr. Clifford Mitchell advises the attending physician that the tonsils were the likely focus of infection whence started the kidney trouble. Examination of the tonsils confirmed this belief.—*Hom. Rec.*, June, 1915. J. L. M.

Intra-capsular cataract extraction has been vastly improved by William A. Fisher in the use of a needle, instead of spoon, to help deliver the lens when loss of vitreous is threatened, and also by the use of a lower lid hook.

Carious teeth a factor in ocular disease. Endogenous and bacterial toxins affect primarily the secretory and nutrient structures of

the eye; *e. g.*, ciliary body, iris and choroid. Among the "organic" causes are focal infections of the rhino-pharynx, accessory sinuses, tonsils, teeth and root canals. "While the teeth and gums have been admitted as a causative factor in ocular disease, they are accorded little more than mere mention in the latest editions of standard authors. Now that the propaganda of oral hygiene has assumed material proportions * * * it is safe to presume that the relationship of carious teeth to diseases of the eye will receive additional stress." Along with other cases A. E. Ibershoff reports that Miss W., age 26, cigar maker, in good health, awoke January 17, 1915, with left vision very hazy; no pain, no inflammation, tension normal. Left vision 20/120, no better with lenses. Visual field (a lighted taper) apparently unaffected. Pupillary reactions normal. Many large vitreous opacities, floating shreds stirred up by every motion of the eyeball. Fundus was hidden by a general diffuse cloudiness of the vitreous. Careful search failed to reveal any nasal or sinus disease.

The mouth was filthy. Leucoplakia buccalis, slimy tongue and teeth in all stages of decay, from minute cavities in the incisors to foul, crater-like root abscesses bordered with cherry-red granulations in the molar regions. She was referred to a competent dentist, while her eye treatment consisted of potassium iodid in ten-drop doses after meals and instillation of dionin, five per cent., in boric acid.

Thirty days later (February 17th) she reported: The mouth was clean, gums a healthy pink and tongue very much improved; all the root cavities were healed; there were no granulations. Vision was normal, and the ophthalmoscope could find no trace of vitreous cloudiness nor apacities.—*J. of O. and O.-L.*, May. J. L. M.

Homonymous quadrangular hemianopsia. George F. Suker reports a unique case of this rare affection, which he traced to a bullet wound of the upper portion of the cuneus. Upon looking downward and then to the right, striking the blind field, the patient immediately had vertigo—sensation of falling over a precipice. This disappeared as soon as he swung the eyes around.

In the discussion (Chicago Oph. Soc.) Thomas Faith mentioned a case in a patient with pneumonia who subsequently died, and another pneumonia case who got about and was fairly comfortable until a sudden unexplained death; in this case the quadrangular hemianopsia

persisted all her life. Dizziness was very marked.—*J. of O. and O.-L.*, May. J. L. M.

Tuberculosis of the tonsil in exceptional instances may so very closely simulate **carcinoma** that the differential diagnosis can be made only by microscopic examination.

The best way to **acquire** a mental picture of the **anatomy of the ear**, preparatory to operating, is first to study sections of the temporal bone each devised to bring out certain relations. Operating (on the cadaver) destroys most of the relations while attempting to expose this or that structure.

A valuable section, a plane parallel to the tympanic cavity and through the Eustachian tube, shows the relations of the antrum, aditus and facial nerve; saw through the petrous portion of the temporal bone on the line from its tip to the tip of the mastoid.—Chicago Lar. and Oto. Soc., *J. O. and O.-L.*, May. J. L. M.

CORRESPONDENCE

To the Editor.

Dear Doctor Mackenzie:

Nothing has appeared of late on the subject of skiagraphic diagnosis of the nasal accessory sinuses to compare with Dr. Beebe's article in our April Journal. He covers the subject tersely and practically and his conclusions are absolutely correct. I miss the illustration of the sphenoid taken in the vertical or "extended chin" position, and take the liberty of sending you one, accompanied by a diagram of technique. Dissatisfied with the reports returned by the x-ray men on cases that should have given definite x-ray findings,

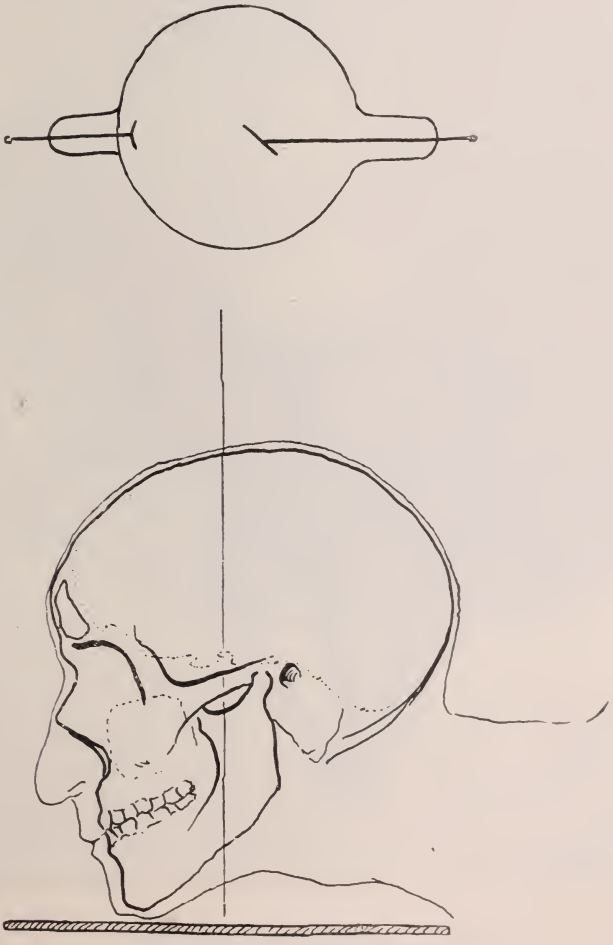


Figure 1. Diagram of Extended Chin Position.



Figure 2. Extended Chin Position.

Dr. Barker, of Philadelphia, and myself took up the subject a year ago and published a communication to the *Laryngoscope*. We found that most of the failures were due to poor pictures and poor positions. Dr. Beebe does not emphasize the matter of poor pictures, probably because has has not had this difficulty to contend with; but in many of our clinics the plates are worthless, the tubes too low, the plates too slow and the exposure too short.

It is my belief that the nose and throat man has been imposed upon too often by the roentgenologist, who usually knows nothing of the sinuses or the diagnosis of sinus conditions. Yet we receive reports made from plates that are absolutely illegible—plates in which if sinuses can be distinguished at all they are found superimposed upon each other or confused by the dense mass of the base of the skull.

True, as Beebe says, the value of the x-ray in helping us to diagnose sinus conditions has been overestimated; yet this would not be the case if better and more exact work were done in this field.

For this reason then Dr. Beebe's article should be read and digested by every nose and throat man, for each one of us must learn this subject himself. We must know the positions for taking the different sinuses, for few x-ray men can pick them out; we must demand good pictures, taken with high tubes and fast plates, and, lastly, we must depend somewhat upon ourselves for interpretation.

As in transillumination the relative value of shadows (whether recent or old) is to be recalled. Caldwell, of New York, who did the first original work in this country in this line, found that the instillation of plain water into the sinuses gave him a shadow. Radiograms of specimens of pus and exudates from various sources show that their opacity to x-rays is practically the same as that of normal salt solution or of pure water.

And, finally, one more word to those who have not as yet familiarized themselves with the subject—it is well to keep the clinical history of the case away from the roentgenologist, for it is apt to bias him or even to tell him what he sees.

Excuse the nature and length of this communication, for I am full of appreciation of such an excellent article.

DOUGLAS MACFARLAN.

To the Editor Jour. O. O. and L.:

Dear Dr. Mackenzie:

I noticed in the March edition of the Journal an abstract from the *Critic and Guide* calling attention to the incompatibility of adrenalin and chloroform. The doctor goes on to state that adrenalin and cocain followed with chloroform as a general anaesthetic is a very dangerous combination, and that "the weakened heart-action from the chloroform and the contraction of the arterioles from the adrenalin cause an obstacle that the heart in its embarrassed condition cannot overcome, and a fatality sometimes occurs."

For the past fifteen years I have been applying both cocain and adrenalin when operating upon the nose under a general anesthetic. In most every case chloroform was used. The following solution was always applied before commencing the anesthetic, and sometimes during the administration: Cocain 5%, and adrenalin 1/5. I have operated during this time not less than four hundred cases, using this combination—cocain, adrenalin and chloroform.

The number of cases given above is much below the actual number operated upon during that time. Dr. Jones, who formerly assisted me, has operated a number of cases in the same manner. Dr. Phelps, who is now assisting me, has also operated a few cases following the same method. In all these cases there has not been one that has showed any unfavorable symptoms, even in the slightest degree. I have inquired of both Dr. Jones and Dr. Phelps and they inform me that they have never noticed any unfavorable symptoms. It seems strange to me that if application of adrenalin and cocain previous to the administration of chloroform-anesthesia is so dangerous, how it happened that out of this large number of cases there was not one that gave some indications of the incompatibility of adrenalin and chloroform.

When a statement like this is made it does not amount to much unless the man has verified it a number of times. Everyone who has been associated with me knows that I am a very close observer and watch the patient all the time the anesthetic is being given, and therefore would not overlook the slightest unfavorable sign. In giving the chloroform I prefer not to have the patient too deeply under the anesthetic, because it counteracts the effect of the adrenalin and cocain, and the bleeding becomes profuse, making the operation more diffi-

cult. I am inclined to believe that if alarming symptoms developed during the administration of adrenalin, cocain and chloroform it was due to the chloroform, and the results would have been just the same if the adrenalin had not been applied.

Yours sincerely,

CHARLES E. TEETS.

A convenient rule. The editor of a newspaper published in Central Pennsylvania tells of articles that he frequently receives from a certain citizen. They are always pertinent and worthy of publication, but they are punctuated in a most peculiar way.

Meeting his correspondent one evening at a friend's house, the editor said: "That was an excellent letter I got from you this morning and I am going to print it Saturday. But tell me, what rule do you follow for punctuation?"

"Why," said the gentleman, "the same rule that I learned when I was a boy. I put a semicolon every twelve words and two comas between each pair of semicolons."—*Youth's Companion.*

NEWS ITEMS

Dr. John L. Moffat has moved to 116 Ferris Place, Ithaca, N. Y.

Dr. De Wayne Hallett will spend the month of August at Chatham Bars Inn., Chatham, Mass., during which period his office will be in charge of Dr. W. A. Reed.

Dr. A. B. Norton and Dr. John Wilson, each with his family, buzz-buggy and a kit of golf clubs, will try out one golf course after another during the summer. At present they are at Hot Springs, Va.

Dr. J. H. Fobes, The Raymore, 1 West 69th street, New York, will receive patients from July 1st until September 15th at the usual hours, 11 a. m. until 1 p. m., on Tuesdays and Fridays, and by appointment. Summer address, No. 11 Brighton avenue, Spring Lake Beach, N. J.

Dr. J. Ivimey Dowling, 116 Washington avenue, Albany, N. Y., will close his office Saturday, July 31. Office re-opened and practice resumed Monday, September 20, 1915. During absence patients are referred to Dr. A. C. Worth, 140 Washington avenue.

Atropin is now quoted to the hospitals at $29.00 an ounce, and the supply very small without prospect of replenishment. One New York hospital is reported as no longer dispensing it in solution, but requiring out-patients to report as many times a day as they may need it instilled in the eye.

WANTED information relative to a good eye, ear, nose and throat location by a capable, experienced man. Would associate with established specialist. Address care THE JOURNAL OF OPHTHALMOLOGY, OTOLOGY AND LARYNGOLOGY.

A large eye, ear, nose and throat practice for sale in Philadelphia. Inquire of Dr. Frederic W. Messerve, Perry Building, Philadelphia.

THE JOURNAL OF

OPHTHALMOLOGY OTOLOGY AND LARYNGOLOGY

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ASSOCIATE EDITOR FOR SEPTEMBER
DR. J. IVIMEY DOWLING

CONTENTS FOR SEPTEMBER, 1915

EDITORIAL

Page

A. W. Palmer, M. D. 739
Inspiration 741
N. B. 743
Announcement 743

ORIGINAL COMMUNICATIONS

Better Speech for the Deaf. Reform Needed in their Education. By Prof. John Dutton Wright 744
Treatment of Iritis. By Archibald C. Worth, M. D. 750
Wood Alcohol Amblyopia—A Case (with discussion). By James A. Campbell, M. D. 756
Glaucoma and Optic Neuritis. By Charles C. Boyle, M. D. 762
Eye and Ear Surgery and Prothesis in 1634. By Ralph I. Lloyd, M. D. 765
Orbital Oedema. By J. J. Wynn, M. D. 773
The Rationale of a New Treatment for the Acute Frontal Sinusetes. By Douglas Macfarlan, M. D. 777
Acute Leukemia as First Manifested in the Tonsils. By George James Alexander, M. D. 780
The Practical Value of the Labyrinth Tests. By George W. Mackenzie, M. D. 787
Farther East: Two Months' Clinical Work in Philadelphia. By Willard Thompson, M. D. 792

HOMOEOPATHIC MATERIA MEDICA AND THERAPEUTICS.

Therapeutics Jottings (Provings and Clinical Observations with High Potencies). By M. Macfarlan, M. D. 795
ABSTRACTS 797
CORRESPONDENCE 804
SOCIETIES 807
REVIEW 808
NEWS ITEMS 809

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The Journal of Ophthalmology Otology and Laryngology

Vol. XXI. SEPTEMBER No. 9

EDITORIAL



A. W. PALMER, M. D.

Arthur Worrall Palmer, son of Dr. Miles Wesley and Hannah Worrall Palmer, was born in the city of New York June 27, 1861, a descendant of the Stonington, Conn., Palmers, who settled there from England in the seventeenth century. His maternal grandfather, Worrall, also came from England.

The subject of this sketch received his preliminary education at the Friends' Seminary, New York, and the City College; was graduated M. D. by the New York Homoeopathic Medical College and Flower Hospital in 1883, and Oculi et Auris Chirurgus by the New York Ophthalmic Hospital and College in 1885. Since then he devoted his attention to the nose, throat and ear, working faithfully in the last-named institution, where he attained the rank of professor and surgeon.

Dr. Palmer was one of the first homoeopathic surgeons in New York to perform the frontal sinus operation; his first case, about seventeen years ago, was reported to the American Homoeopathic Ophthalmological, Otological and Laryngological Society in Atlantic City; the patient is still living and in fairly good health.

During the closing years of the last century he assisted Dr. Deady in the editorship of this Journal, and when it was assumed by Dr. Moffat in 1900 became business manager and associate editor. In 1904 the owner discontinued publication and Dr. Palmer bought the *Homoeopathic, Eye, Ear and Throat Journal*, which he managed and, in conjunction with Dr. Moffat, edited for six years, until it was merged with the revived *Journal of Ophthalmology, Otology and Laryngology* in 1911, which volume was curiously the eighteenth of each publication. The rights to this journal having been acquired by Dr. Moffat were given to Dr. Palmer at this time, since when he was proprietor, business manager and, in conjunction with Dr. Moffat, editor, until the failing health of both necessitated its sale in 1914 to Dr. McCleary.

Dr. Palmer held membership in the American Institute of Homoeopathy (since 1892), American Homoeopathic Ophthalmological, Otological and Laryngological Society, American Medical Editors' Association, National Society of Electrotherapeutics, New York State Homoeopathic Medical Society (since 1899), Hahnemannian Association, Academy of Pathological Science, New York County Homoeopathic Medical Society and the Alumni Association of the New York Homoeopathic Medical College and Flower Hospital; he was surgeon and Professor of Laryngology and Rhinology, New York Ophthalmic Hospital, and Laryngologist to Metropolitan Hospital and to M. E. Church Home. He was the originator of the quinquiennial class reunions at the New York Homoeopathic Medical College, in whose Alumni Association he was active for years.

In 1892 he married Miss Elizabeth B. Giveans, of Vernon, N. J., who survives him with his son, A. W., Jr., and his sister, Miss Luella A. Palmer.

In June, 1913, failing health compelled him to give up practice. His disease, commencing with small central scotoma, was very obscure and insidious and proved to be (pernicious) spinal anaemia, terminating fatally on June 10, 1915, after a well-fought and patiently-borne illness of more than two years.

Dr. Palmer was so modest and unassuming that one had to know him well to appreciate him. The writer can say that in a close business association of sixteen years there was never a hitch in the friendship; he never experienced even a hasty word from Dr. Palmer. His characteristics were faithfulness, conscientiousness, studiousness. An indefatigable worker and cautious operator, he took his recreation in his professional and journalistic work, to which fact we fear his illness was attributable—at least in part.

John L. Moffat.

INSPIRATION

This word has several meanings according to its application. The one here intended and selected from Webster is, "The act of exercising an elevating influence upon the intellect or emotions." When coupled with the proper admixture of imagination and tenacity it spells genius and accomplishes for the one possessing it results which to the average man seem impossible.

Inspiration is a faculty of the human mind and soul and therefore stands higher than the senses, but in a way may be compared to them in that they require an external stimulus or impulse to make them conscious.

All normal individuals possess this faculty in proportion to their training. The man who does not possess it is but little higher than the brute. The average individual has it developed most markedly between the ages of puberty and forty-five years. There are, however, rare instances where it is well developed in earlier childhood and in later life.

The parents should attempt to awaken inspiration in the child at an early age by reading to it the lives of great men and women,

laying stress upon their honorable deeds and accomplishments. Later on the child will voluntarily pursue the further study of this kind of literature, feels its ennobling influence and in many ways imitates his heroes. Should he as a young man incline towards the study of medicine let him not neglect the careful reading of one or more of the excellent works on the history of medicine, which will do more at this time than anything else to foster his faculty of inspiration. In selecting his future alma mater let him choose the best college that he can find, if the distance is not too great and his pocketbook too limited. At college he sooner or later comes across a man on the teaching staff who measures up to his ideals and whom he will try to emulate, if not excel.

After graduation he may choose one of several courses, depending upon circumstances, but he will be ever awake to conditions that inspire him no matter where he goes, unless he meets with phenomenal financial success, in which event he is in danger of losing the more precious possession, a keen faculty of inspiration.

There is nothing that stimulates and keeps alive the faculty of inspiration like attendance at medical conventions. One is almost sure to hear a subject presented concerning which he feels that he knows too little. His inspiration is to know more about it. He may, while attending the convention, visit a clinic where he sees someone operate so skilfully that an inspiration is awakened to do as well or perhaps better when he reaches home. He receives other inspirations and he goes home with the satisfaction that he has spent his time more pleasantly and profitably than he might have done had he taken the automobile trip that he first contemplated.

Inspiration may also be aroused through the reading of medical journals. No man can hope to progress who does not subscribe to and read at least a few of the standard journals.

The excellent quality of papers heard and the wonderful work seen in some Western clinics during my attendance at four conventions in June, namely, the A. L. O. R., the A. M. A., the A. I. H. and not the least, our O. O. and L., were stimuli that prompted me to do better work up on my return home. It is this same inspiration that prompts me to pass it on.

Let everyone plan early to attend the meetings next year. The

majority of them will be held in the East. Let the Easterners turn out in full force and reciprocate for what the Westerners have done for us this year.

N. B.

The Cincinnati contingent of the Southern Homoeopathic Medical Society are doing everything possible to make this year's convention one of the biggest and most successful in its history. Meeting as it does in Cincinnati, the convention should draw a large attendance from the North, the South, the Middle West and the East. In membership, in attendance and enthusiasm at its meetings the Southern Society is second only to the American Institute of Homoeopathy. Don't forget the dates—November 9, 10 and 11.

ANNOUNCEMENT

Dr. J. R. McCleary, our general manager, will act as associate editor for the October number of the Journal. Dr. McCleary, who is a live wire, is working hard to make the October issue the best one of the year. This number will be devoted entirely to things electrical. Dr. McCleary has a dozen or more excellent papers in hand.

BETTER SPEECH FOR THE DEAF

REFORM NEEDED IN THEIR EDUCATION

Prof. John Dutton Wright,
Wright Oral School, New York City.

THE public education of the deaf was begun in the United States almost a century ago. It was started wrong.

All great public misfortunes, from the results of the historic apple to the present frightful European situation, are the widening circles of some individual wrong act dropped into existing conditions.

The misfortune of deaf children's educational treatment in the United States is the far-reaching result of the mercenary selfishness of an Englishman named Braidwood.

Young Mr. Gallaudet went from Hartford, Conn., to England in 1816 for the purpose of learning the procedure involved in the education of the deaf by the speech method, in order that he might introduce that method into our country. He found that knowledge of the method was a monopoly in England and the man who controlled it demanded a larger sum than Mr. Gallaudet had at his disposal. Therefore he was forced to abandon his original desire, and went across the Channel to Paris, where the French were, at that time, teaching the deaf by means of a silent system of signs invented by the Abbe De L'Epée.

For that reason it was this silent method which Mr. Gallaudet brought back to America, and this dying stock of the old world, long since abandoned in France, that was transplanted to the fresh soil of the New World and spread over the entire continent. To this unfortunate incident is due the fact that the United States is now the principal stronghold of the world for the silent method of educating the deaf, that has so deeply embedded the words "deaf mute" and "deaf and dumb" in our language.

It was fifty years before the speech method that Mr. Gallaudet originally intended to bring back with him finally got a start in this country. Since 1867 this method has made steady inroads upon Mr. Gallaudet's silent method, until today no school for the deaf dares

be without some provision for oral work. But in the struggle for continuance the silent method has invented a hybrid system, which they call the "Combined System," the object of which is to employ both the speech and the silent method in an effort to make acquisition easier for the pupils. After years of experience, however, even the superintendents of the combined schools have arrived at the conclusion that the speech method cannot be employed with the maximum efficiency where finger spelling and the sign language are permitted in the intercouse of pupils, teachers and employés.

Forty of the superintendents of combined schools recently replied to a letter of inquiry from one of their number, and thirty-eight of them agreed that the reason for the relative inefficiency of the speech work in their schools is the lack of what they described as a "speech atmosphere." That is to say, that while the pupils are given some instruction in speech, yet there are other pupils with whom finger spelling is used, and outside the class rooms finger spelling and the sign language are permitted in the study-room, dining-room, shops and playgrounds. In fact, outside of the four or five hours in the school-room, practically all the intercourse between the pupils, supervisors, teachers of industries and among themselves is by silent methods. Of course, under such circumstances, the pupils do not form the habit of *thinking* in spoken forms or acquire any readiness in reading the lips.

There are in the United States ninety-four schools in which this "speech atmosphere" exists, the lack of which the combined schools lament. In these schools the spoken form of communication is used with and by the pupils throughout all their waking hours. In these schools the average efficiency and success of speech-teaching is naturally greater than is possible under combined conditions.

There is a way by which this unfortunate state of affairs can be quickly and inexpensively remedied to a considerable extent. That is by enlarging the Combined System to what may be called the Dual System by installing an *entirely segregated* department in which the pupils who are taught orally can live in the speech environment, which is an absolutely essential element in efficient oral work. This change can be quickly made in any combined school at an initial expense varying from one to five thousand dollars, according to circumstances, and a subsequent additional annual expense of from five

hundred to a thousand dollars.

As the combined schools are organized at present they are doing speech work with a minimum of efficiency and a maximum of failure.

If this simple and practical reform was effected those same schools could do their speech work with a maximum of efficiency and a minimum of failure.

To change the combined schools into pure oral schools and wholly eliminate silent methods would require from eight to ten years and a large amount of intelligent effort and the overcoming of much opposition.

The plan here suggested can be put into operation at the beginning of the coming school year by providing a small cottage for the little entering beginners, wholly segregated from the rest of the school and assigning to these little ones the same teachers they would regularly have, arranging their hours of work, play and eating in such a way that they would not come in contact with those pupils with whom finger spelling and the sign language are used. The following year there would be added to this little group the new group of little entering children.

It was in this way that the great Pennsylvania Institution near Philadelphia, was gradually changed from a silent to a speech school. The reform need not, however, necessarily go so far as to eliminate the combined system entirely, but only to establishing the Dual System, which really means two schools under one management and control.

The taxpayer's money was appropriated to the amount of $1,750,753 last year for the purpose of giving deaf children instruction in speech. Common sense requires that this sum be expended with the greatest possible efficiency. At present it is being expended with the maximum of inefficiency. If the public can be educated to an understanding of this and can appreciate how readily this undesirable state of affairs could be improved, those in authority in the legislatures and in the schools would soon be compelled to install a more efficient system.

In some countries of Europe all deaf children are educated by the speech method, and this is also true of a few states in the United States. The fact that all deaf children, of whatever degree of intelligence, can be given as much education by means of the speech method without recourse to finger spelling or the sign language as they could be given by means of those silent methods of communication has been

so fully and so practically demonstrated on a very large scale both in Europe and the United States that it is no longer a question properly open to academic discussion. If anyone wishes to know the facts, they are easily found in Germany, France, Italy, Sweden and other parts of Europe, and in Massachusetts and Pennsylvania, Rhode Island, Michigan, Wisconsin and many other states of our own country. It requires a higher order of intelligence to teach the deaf by the speech method than by silent methods. It costs more money to do it well, and more labor. But it is thoroughly worth while. The effect of education by the speech method is to reduce to a minimum the isolating tendency of deafness, whereas the effect of the silent method is to increase to a maximum that unfortunate tendency.

The largest school for the deaf in the world is located at Mount Airy, Philadelphia. It was in the beginning a school in which only silent methods were employed. The same man is at the head of it today who was there thirty years ago. He has given this matter the most careful and practical study as to comparative results. Slowly and conservatively he changed his school to one in which the speech method is employed exclusively. All the deaf children who attend school in the State of Massachusetts are taught by the speech method in a speech environment; that is to say, under conditions where all persons in charge of the children always communicate with them by speech.

But there are still many states in which such schools have yet to be created. The parents of deaf children in those states are under the burdensome necessity of sending their children to remote points at great expense if they wish them educated in a speech environment.

If we examine for a moment the conditions under which the so-called "Combined" Schools attempt to give some instruction by the speech method we shall quickly see why the results are unsatisfactory to pupil, teacher and parent.

We will only consider the *most favorable* conditions existing in combined schools, though in many of the institutions the situation is much worse. Under the best speech teaching conditions in these schools some of the pupils are taught by the speech method exclusively during the four or five hours they are in the school room for five days in the week. The maximum time that these pupils are in charge of the oral teachers is twenty-five hours a week, but they are

not engaged in speaking or watching speech in the classrooms more than fifteen hours a week. The average number of pupils in a class is about ten, and while each pupil could, if he paid close attention, get all the practice there is in reading the lips whether the speaker was addressing him or another, he can have only *one-tenth* of the chances to use speech himself, and that could not exceed *an hour and a half a week.*

Outside the classrooms, while the pupils are in the shops, dining-room, play-room, chapel, recreation ground, gymnasium and dormitory, practically all communication with them on the part of teachers of industries, supervisors, gymnastic instructors, and, I regret to say, even by the superintendent and many of the teachers, is by means of finger-spelling or the sign-language.

Therefore, while for a maximum of fifteen hours a week the pupils have an opportunity to learn to read the lips, and for an hour and a half a week are made to use speech themselves, yet during the remaining ninety-seven waking hours each week they not only have little or no opportunity to use spoken forms, but they are actually exercised in another and silent method of communication.

One hour and a half a week in which to train the brain and the organs of speech to co-ordinate *automatically* in the subtle and complex operations necessary for speaking, and ninety-seven hours in cultivating a silent language. Is it any wonder, then, that all concerned with combined schools find the results unsatisfactory so far as speech-teaching for practical purposes is concerned?

Hundreds of children enter these combined schools with speech already acquired before deafness occurred, or with a sufficient residue of hearing to acquire speech by the co-operation of eye and ear, and yet very many of these children come out of these institutions at the end of five or ten years practically without speech, and this analysis of the speech-teaching conditions makes the reason plain.

The *very least* that should be done is to place the adventitiously deaf, the partially deaf and bright congenitally deaf beginners of five and six years of age in a segregated department in which they live and are taught in a *speech atmosphere* or environment, where every person who comes in contact with them will exercise them in the use of speech as a means of practical communication; that is to say, the enlarging of the combined system into the dual system.

Physicians can and do exert a wide influence in every community, and they can, if they will, do very much to educate the public to know what should be done for deaf children and to insist upon its being done.

Most of the superintendents would gladly make this reform if they could obtain the small additional appropriation from the state and could have the hearty co-operation of the parents of the pupils and all public-spirited citizens.

For the sake of thousands of present and future helpless deaf children let us put our shoulders to the wheel and move the car of progress along the road of better speech-teaching conditions in our schools for the deaf.

TREATMENT OF IRITIS

Archibald C. Worth, M. D.,
Albany, New York.

IRITIS—that means get busy. Nature may cure a fibrinous pleurisy, yes, with painful adhesions; may cure a fibrinous perimetritis, with often an after-life of misery; may cure an exudative iritis—yes, and probably the patient will be blind.

Iritis is a disease for which the patient needs a specialist. Expectant treatment in many diseases is an admission of ignorance; in iritis, expectant treatment is criminal. Thousands have expected the cold in the eye to get well; of the thousands many are now blind. Iritis therefore means immediate action, often the more to overcome the expectant treatment trusted for days or weeks. To me, iritis is a matter of deep concern. A grave responsibility rests upon him who would control the whims of a diseased iris. However, the necessity for strenuous treatment is surpassed by the satisfactory results so often obtained.

Treatment may be pictured as a wheel. There is always a hub, without which accessory methods are useless. Atropin is the hub; mydriasis must be the first object. Spokes in the wheel of treatment are dionin, hot applications, subconjunctival saline injections, electricity, elimination by medical or surgical means of adjacent or constitutional pathology.

Atropin imparts motive power to the iris, but much of iritic treatment lies in the assistance of atropin in this function. Without atropin no dilation; without use of measures tending to reduce inflammation we often get no action from our mydriatic. Therefore do not expect the mydriatic to work immediately; it may take many hours of accessory treatment to make its action visible. Never put any mydriatic into any eye without first observing the tension, and constantly watch tension during its use. In fact, one should constantly observe tension of every eye at all times. Tension is somewhat a relative matter. Remember it is possible that in some cases of iritis tension may be, so to speak, normally present; therefore a differentiation may be

necessary between tension and glaucoma. I rather believe that at certain stages of the disease tension exists in some forms of iritis. I have seen but one case in which acute tension requiring operative interference resulted from the use of atropin; such cases may be very common. However, when atropin is necessary one must take the chances of inducing tension. I believe in using atropin in massive doses if necessary. Powder I often employ, commonly two or four per cent. with dionin; and I have injected atropin subconjunctivally with good results. When using atropin freely, prescribe water very insistently as a medicine. A high enema once daily is a valuable adjuvant treatment. Give morphin immediately by hypo in case of motor disturbances. Watch the patient physically, especially his excretory functions, and observe him mentally. Hallucinations of all kinds are not uncommon; mania is often seen; death may result from atropin poisoning. Never neglect to order liquor for patients who are in the habit of having the same. Your atropin poisoning may be a case of dipsomania. Relatives and friends, house doctors and nurses, ought to be informed of possibilities when large amounts of atropin are being forced upon the patient. The subconscious activities of these patients may become the cause of ill-treatment on the part of those caring for them. In dispensary practice patients must be impressed also with the poisonous quality of atropin eye-drops; too many children are victims of medicines lying around houses. My point is that atropin is a poison, dangerous at times even in the hands of the expert. But the end justifies the means. One should insist on the instillation of atropin during the whole night as in the daytime, especially during the early stages of the disease. Why pupils contract and adhesions form during the night seemingly more than by day is not altogether clear; but certainly, in my experience, from 7:00 P. M. until 7:00 A. M. is a dangerous period, and the nurse must be on her job especially then. I cannot emphasize this too strongly. Also, proportionately more atropin is necessary when dionin is being employed. The lymphagogue action of dionin not only causes absorption of exudates, but also must cause quicker elimination of atropin; therefore more atropin must be used. This fact I have observed many times. Also in iritic inflammation accompanying degenerating corneal conditions, more atropin is necessary to insure constant mydriasis. Why? Because less atropin is absorbed into the anterior chamber

by reason of the altered condition of the cornea. I have often observed the difficulty of keeping dilated what appears to be a normal iris in a case of severe interstitial keratitis; similarly in cases of ocular injury, where the anterior chamber is opened; following operations where seepage from the anterior chamber persists; when the aqueous itself is altered; when much blood is in the anterior chamber; immediately following subconjunctival injections; in all these cases one finds the action of atropin more evanescent. Proportionally more must be used to insure proper mydriasis.

Again, do not speak of the complications of iritis without recognizing the complications of the use of atropin—but knowing them, face them. Use atropin as a mighty weapon; it is a "sine qua non" in cure of iritis. Whoever said, "Damn the mines, go ahead," only expressed what must often be our attitude toward complications. Use enough atropin; only thus can some eyes be saved.

Dionin is atropin's first assistant in iritis and a very able one. Its instillation hurts the patient, but the aftermath is great comfort. It is a powerful and quite permanent analgesic. Of course dilatation alone relieves pain, but dionin will be found to relieve after dilatation is complete and pain still persists. During the process of dilatation I believe in the constant, frequent use of dionin; after dilatation a judicious use at longer intervals is better. Thus toleration is not reached so soon and the effect of the drug is enhanced. One must study the dionin index of every patient. Never prescribe dionin without first instilling a drop yourself and determining the reaction of the individual. The frightful appearance of an eye from dionin in a susceptible patient fails to increase his confidence in you unless you have reassured him. In sensitive persons instil cocain before employing dionin for the first few instillations. As the reaction of the drug decreases from tolerance, or where a very profound action is desired, one may use powdered dionin. It makes a raw eye very often, but the comfort of the patient is inversely proportionate to the ocular appearance. The powder may be applied directly to the inferior cul-de-sac with forceps or cotton applicator. An interesting phenomenon after using dionin is sneezing. This may result immediately or after a few minutes, and is the result, not, I believe, of irritation of the nose by way of the lachrymal canal, but by direct influence through nerve channels. Similarly, as is often observed, sneezing may result

from even very superficial treatment of the external auditory canal. Such being the case, who will deny the reverse possibility that nasal irritation may reflexly cause numerous ocular symptoms and ultimately disease of the eyes, for we know that the basis of diseased states is often only a constantly recurring irritation. Please observe this action of dionin; it opens an interesting field of speculation.

I maintain that subconjunctival injections of saline positively exert an intraocular effect. In a number of cases I have observed a change in exudative processes which enabled dilatation to take place. Among the most accurately observed cases are the following:

Mr. M., Italian; specific iritis with many adhesions; one month duration; atropin and dionin in solution and powder caused but very slight dilatation. However, a very large injection of saline was made. Within two hours tremendous dilatation in one segment took place, amounting in one direction to complete mydriasis. So extensive was the effect after other means had failed that one's faith in the procedure could not but be greatly strengthened.

However, Case II was more conclusive. Mr. K., serous iritis—both eyes; use of strong solutions and powdered atropin and dionin, hot packs, and every accessory method of treatment over a period of days failed to resolve two strong adhesions to nasal side in one eye. Pain persisted; no relief was in sight; there was every reason to believe permanent synechia would remain. Subconjunctival saline was administered; in fifteen minutes both adhesions had broken loose from their attachments. A perfect result was obtained.

I now employ the injections, not always seeing such remarkable results, but confident that they produce a powerful releasing action. When iritis seems refractory to treatment I feel I have neglected a most valuable method unless the saline injection is employed. A word as to the technique of injection. Use cocain and wait until it has time to act; it is ridiculous to expect any local anaesthetic to act immediately, yet many do so. Use a syringe with a plunger which will work easily; the syringe, held in the right hand, should be capable of complete manipulation with that hand; one must be able easily to push down the plunger with the pressure of the thumb or index finger. Ground glass plungers have a tendency to stick; the asbestos-packed plunger has a slight side motion, slides easily, and is the best. A very little pressure will cause the saline to undermine the conjunctiva.

Be sure that the needle is sharp and clean throughout, for the conjunctiva is apt to be thickened and rusty dirt driven under the conjunctiva is not well tolerated. In inserting the needle always point it away from the corneal margin. It is best to lift up the conjunctiva with forceps at the point of injection. From forty to sixty minims of saline may be totally injected, making an entrance with the needle at two or three points. The artificial chemotic appearance is tremendous, often bulging out beyond the margin of the lids; however, a tremendous reaction is produced and absorption and leakage of the solution soon reduces the swelling; slight protective dressing is advisable. Remember that more atropin must be used after injection in order to insure equal mydriasis, and dionin should not be used until a large amount of the artificial chemosis has subsided.

Among practitioners classified as homoeopaths it has become too fashionable to decry the homoeopathic remedy. Although you may not believe in homoeopathy, still you may be an empiricist. Certain remedies do give results. Gelsemium where serous exudate predominates will assist in regenerating the aqueous, vitreous and retinal elements. Think of rhus tox in vesicular conditions accompanying iritis; it will often relieve ocular pains. Bryonia may be used in traumatic conditions. Never forget thuja and give it in appreciable doses; it is a wonderful remedy where the sclera is also involved and vitreous changes are present. Echinacea helps to reorganize the failing protective powers of the body and is useful in ocular inflammations accompanying forms of septicemia. Similarly, gleaning among homoeopathic remedies will often result in a most helpful prescription, for, after all, relief and cure are superior to a profound knowledge of the pathology. However, I do not mean to deny the great value of other medication. Formin, aspirin, atophan, mixed treatment, arsenic—all are useful, and each may fit perfectly at times into the puzzle of successful treatment.

As a routine one seeks constitutional causes for iritis; however, local and adjacent disease-processes should always be found and treated. The more neglected of these are the nasal accessory sinus conditions. A thorough study of these often reveals a source of irritation, if not a true cause of the iritis. Exploratory puncture of the antrums may be necessary, and is always a justifiable procedure. Radiographs of the head are indicated. Very often, even when definite

foci of infection are not found, the Dowling method of tamponade with the argyrol, daily or every other day, will not only give great comfort to the patient, but also hasten the resolution of the disease. Never be loath to employ the argyrol tamponade because the nose appears normal, for, like the saline subconjunctival injection, it produces around and in the eye a very positive stimulation.

Treatment of iritis is not for today only, but for the rest of the patient's life. One can never be sure that a recurrence is impossible. Iritic inflammation is often surprisingly fulminating. Patients should be tactfully warned of the necessity of immediate treatment in case of recurrence, and should be acquainted with symptoms indicating onset of trouble. The treatment, therefore, of iritis is not complete until the patient is taught that expectant treatment is a flirtation with blindness.

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WOOD ALCOHOL AMBLYOPIA—A CASE*

James A. Campbell, M. D.,
St. Louis.

WHEN a case with involved vision comes to us and examination shows optic nerve atrophy, the prognosis and treatment are necessarily determined by the character, cause, degree and length of time it has existed.

There are so many distinct causes for optic nerve atrophy that it is often difficult to answer these questions with certainty, especially if it has existed for any considerable length of time or is not apparently associated with some other definite cause. However, it may be accepted in general that a large majority of these cases are secondary to some other cause—constitutional, cerebral, nervous reflex, toxic, or pressure from accessory sinuses or contiguous organs. For these reasons a differential diagnosis is essentially important.

To illustrate the above I wish to present a case of optic nerve atrophy which may have some points of interest.

A few months ago a lady, age 60, married, came to me blind in the left eye and right eye involved. In former years she wore glasses on the street and for six or seven years had used reading glasses. The left eye was never so good as the right. Two or three years before I saw her she said she had the left eye poisoned by splashing wood alcohol into it, and from that time on the vision of the left eye had rapidly decreased until it was gone. She had pains in the head and eyes and a queer dizzy feeling, in fact, felt badly all over.

Examination showed V. R. $=15/50$, with $+1.50_s=15/20$; with $+4.50_s$ J-3—8″ 15″. Left eye V. $=0$, only faint perception of light. Right pupil, reflex normal, anterior chamber normal depth. Iris normal color. Left eye, pupil slightly dilated, no light reflex, anterior chamber normal. Iris not discolored. T., both eyes normal. Ophthalmoscope, in right eye gray atrophy of the optic nerve. In the center of the nerve was a whitish spot, or physiological excavation; from there to the nerve periphery, which was distinctly outlined, was a gray atrophy. The displacement of the bloodvessels was that of atrophy and not glaucoma, for there was no bending over the edges

*Read before the O. O. and L. Society at Chicago, June 29, 1915.

or abrupt cupping of the disc as seen in glaucoma. Surrounding the disc was a yellowish-white band of choroidal atrophy, differing from the ordinary atrophy, for there was evidently an infiltration or edema, giving it a slightly raised position, but not in any way obscuring or interfering with the outline of the disc itself. The arteries were small and the veins full, thus showing pressure in the nerve itself.

Strange as it may seem, the color-sense in this eye seemed nearly normal, but the F. V. was lacking in the lower inner segment.

The left optic nerve was identical in appearance with the right, but there was only perception of light. This recalls a fact to my mind which has always been a source of wonder. I have seen eyes with very defective vision with scarcely any perceptible reason for it, as far as the inner eye was concerned; then again in a number of cases, like the above, with apparently identical fundi, one eye blind and the other with V.=15/20.

In this case nothing in her history could be assigned as a cause. No injuries, no severe illness, no organic, functional or constitutional disease could be elicited.

On questioning her more closely as to how she splashed the wood alcohol into her left eye, it was brought out that she bathed a lady friend's chest with wood alcohol for a couple of weeks—said lady having tuberculosis. It was from this time that her eyes began to fail. Since the implication of the sight was coincident with and followed the use of wood alcohol, without any contrary evidence I accepted this as the cause.

I am not relating this case of methyl alcohol blindness as unusual or rare, for many cases have been reported for the last twenty years. I am of the opinion, however, that owing to the widespread warnings on the dangers of its use and the effect of the laws prohibiting its use in many directions these cases are growing less and less. I am offering it because it assumed rather an unusual form when compared with the majority of cases so far given.

A résumé of the views on methyl alcohol amblyopia shows that it may be toxic, either by ingestion, inhalation or cutaneous absorption; that the immediate effects are headache, dizziness, weakness of the extremities, nausea, abdominal pains, prostration, and in aggravated forms may end in delirium and death. As a rule the blindness does not appear until a day or so after ingestion.

In such cases the pupils are widely dilated and the optic discs are blanched white.

As to how it affects the inner eye, Birk Hirschfield (*Archives Opth.*, Vol. LIV) thinks it results from marked changes in the ganglionic nerve cells of the optic nerve. This view is borne out by the experimental researches of Tyson and Schoenberg (*Annals Opth.*, XXIV) who performed a number of experiments on dogs and rabbits, giving data of the experiments in detail with blood count and microscopic findings, which indicate edema of the tissues with very early signs of beginning degeneration of the ganglionic cell-layers of the retina; treatment is more successful if instituted before this degenerative process takes place. E. Gruening has benefited cases by the use of iodide of potash, strychnia, pilocarpin, etc., while Ziegler reports good results in recent cases with galvanic electricity; others have used stimulating diuretics, ammonia and oxygen inhalations, iodide of sodium and alkaline waters.

The variety of treatments offered and the uncertain results obtained leave us large discretion in this direction. In my own case, which had existed for two or three years with degeneration atrophy a certainty, I did not expect any marked improvement. But the pains in the head and back of the eyes were relieved by gels., strych. phos. and electricity. The vision of the right eye made a slight change for the better, reaching nearly 15/15, but varying between 15/20 and 15/15 with a +1s glass.

We may in conclusion say that amblyopia from methyl alcohol does not differ much from other forms of toxic amblyopia; that the prognosis is more favorable when treated before the stage of degeneration has taken place; that the appearance of the nerve often resembles glaucoma without tension; that the opthalmoscopic picture is not always the same, but is subject to variation; that the prognosis is fairly good if taken in its early stages, and that after the stage of nerve degeneration is reached very little can be expected from treatment.

DISCUSSION

C. G. Fellows: It is pretty hard to discuss a paper where all the statements are final. I am glad to believe them, as I am unable to contradict them.

E. J. George: Some twelve years ago I saw a case of optic atrophy

following the inhalation of the fumes of wood alcohol.

Two painters were working in the inside of a large beer vat, covering the inside with a size of shellac dissolved in wood alcohol. The day was hot and the alcohol evaporated rapidly in this very much enclosed space where they were working; they worked until they felt dizzy and had symptoms of intoxication; they went home sick and the next morning awakened blind. Their vision improved a little for thirty-six hours and then lapsed. Atrophy followed. These cases show that the inhaled fumes are just as fatal to the vision as if the liquor had been drank.

N. Bentley: In these cases of optic atrophy I have been using the sinusoidal current. I have also used it for opacities in the vitreous. In optic atrophy I have never failed to get some results. I do not say that I got great results, but that I got some results. I have tried it in hopeless cases and brought the vision up to 3/100 when it was below that on starting. That is not much, but it is something. I have tried both the slow and the rapid sinusoidal and I got better results with the latter. With other methods I have had failure, but with this current at least some slight results.

E. J. George: Which do you use, the true sinusoidal or the multiplex alternating current? This latter is like the Faradic current.

N. Bentley: I have not used the multiplex.

E. J. George: The true sinusoidal current will make the patient dizzy.

N. Bentley: Yes, but it passes off immediately after the treatment.

E. J. George: It is the multiplex that gives the most stimulation and hence it is the current that is the most beneficial in paralysis. I had a case of optic paralysis that I was not able to move at all for a time; vision remained stationary. Then I used the multiplex and improvement has at least begun. Before that I had him give up liquor and tobacco, but it did not help him. I then used the high frequency and he improved.

G. D. Arndt: The galvanic current with the negative pole at the optic atrophy and the positive on the spine would seem to me to be the ideal. I cannot see why the sinusoidal current would be indicated. It would seem to be opposed in its action to the state of the nerve; whereas with the negative pole of the galvanic current you get stimulation in the region of the paralyzed nerve. I never have treated a

case of alcoholic blindness, but it would certainly seem that this would be the treatment for it.

F. C. Sage: Did you say, Dr. George, that you had used it in a case of alcoholic blindness?

E. J. George: No. This was a case of tobacco amblyopia mostly; there had been some alcohol used.

F. C. Sage: If there is no more discussion I will call upon Dr. Campbell to close.

J. A. Campbell: I certainly anticipated more criticism upon my diagnosis. I called it alcoholic amblyopia because any other causation was inconsistent with the facts presented. I saw a case right here in Chicago in which somebody had advised bathing the shoulders with wood alcohol and the result was that the patient went blind. One of my objects in bringing up this subject was to emphasize the dangers of this form of alcohol for any purpose. It is used for producing heat and for many domestic purposes; also in the arts and sciences and as a solvent in making varnishes. Betz got up an instrument using it in connection with a hot air machine. Cowboys have been known to get drunk on essence of ginger which contained it, which was risky. Not long ago some men held up a train and found some essence containing wood alcohol and got drunk on it, with the result that some of them went blind. I am not saying this because it is new to you, but simply to bring again to your minds its possibility in the production of blindness. Unless you have a history of the use of wood alcohol I do not know that the atrophy that it produces can be distinguished from atrophy from other causes. We have cases where to look into the eye one would suppose that the patient had perfect vision and still they could not see; on the other hand, cases like the one I give, with badly involved optic nerves, with very good sight. This is one of the mysteries that I have not quite solved. The only solution I can think of at present is that as there are 400,000 fibers, more or less, in the optic nerve it is possible for many of them or most of them to be dead, but enough left to convey the sense of sight. If there is one wire left in a broken cable it will convey some electricity. In the case I have in mind the sight of one eye is gone. I took hold of it a year ago. She sees better than she did at that time.

One case of optic atrophy came to me from Arkansas; one eye

was gone—could not see anything. The other had about 15/50; the condition was gray atrophy. I did not know whether I could do anything for her or not, but tried with the Wappler vibrator and other means. Vision improved from 15/50 to 15/20 in a few weeks—two I think—so that even if it looks like a clear case of gray atrophy we should not despair, but do our best.

W. O. Bell: A good many years ago when sailors had to sail around Cape Horn and live on poor provisions, facing cold winds and other hardships, it was noticed that they often became blind. Then it was discovered that if they covered one eye one day and the next day reversed it, that the eyes were saved. It simply meant that it took time to restore the exhausted visual purple. Anything that will restore that will improve the vision and I think that it explains why electricity improves the vision in such cases.

WAGGING THE EARS

You will rarely find that a man who can wag his ears suffers from deafness. The reason for this is very simple. Wagging one's ears exercises them just as much as walking exercises the muscles of the legs. A great deal of deafness is caused by the muscles of the ears becoming stiff and refusing to respond quickly to the sound waves. Quite a large proportion of children can move their ears, just as they can move the skin on their forehead up and down, but as they grow up they lose their power through want of practice. It is a mistake to let a child lose this power, for it may mean the difference between good and bad hearing in after years. Dr. M. Fernet, the famous Paris doctor, has even gone so far as to suggest that people should be trained to wag their ears, just as they are trained to exercise any other muscles of the body.—*San Francisco Chronicle.*

GLAUCOMA AND OPTIC NEURITIS

CHARLES C. BOYLE, M. D.,
New York.

PATIENT, female, age 60. Has been addicted to the use of morphine for over twenty years, taking as much as six or eight grains per day, hypodermically, so that almost the entire body is covered with bluish marks from the use of the needle. At the time her physician was cutting down her morphin, which became a necessity, as under the law she could not obtain it as she formerly did, her eyes commenced to trouble her, which her physician believes was caused by an iritis.

When I saw her she had glaucoma in both eyes, either caused or aggravated by the atropin that had been used to dilate the pupil; both eyeballs were inflamed and tension about +3. I immediately performed an iridectomy on both eyes.

Before operating I tried to see the fundus with the ophthalmoscope, but on account of the haziness of the cornea, due to the increased tension, it was impossible. At the time of the operation patient could not see anything, not even a light.

As this patient lived out of town I did not see her for a week after the operation and on examining her eyes I found the tension down to normal, and on using the ophthalmoscope I discovered she had a neuro-retinitis in both eyes; the outlines of the nerve were very indistinct and the nerve very much congested, but not a choked disc; the veins were engorged and tortuous, the arteries very near normal in appearance.

Previous to the operation the physician in charge had recognized the glaucoma, stopped atropin, and had put her on eserin solution, which was continued; also dionin, 10% solution, three times a day. I had the patient brought to the city and put her in the hospital, where I could see her daily.

Suspecting the possibility of an old syphilitic history I had two separate Wassermans made; both were negative. While waiting for the reports I put her on inunctions of mercury, as I did not want to lose any time if it were positive, and knowing it would do no harm

if negative; possibly be of benefit.

There were no changes in the appearance of the fundus under the inunctions, nor any signs of returning sight. Her urine was normal and blood pressure not very high, 155 mm. There were no indications of any brain complications; in fact, nothing that I could ascribe the neuroretinitis to, unless it might have been in some indirect way caused by her mental condition, as she was under considerable nervous strain on account of her husband, who was also a morphine taker, and on stopping it he had gone out of his mind; he always had been a little off.

From the appearance of the optic nerve, its intense congestion, I gave her duboisia 3x every two hours, and under it the congestion gradually subsided. Later I put her on belladonna 3x, under which the inflammation disappeared and the nerve passed over into an atrophic condition; but as far as appearance went it was not a total atrophy. She had regained some vision in the left eye, 20/70, but with a very narrow field (stovepipe), so that she could not see to walk around the room alone, but could read Jaeger type No. 13 with a glass. Her right eye remained without any sight, and the right optic nerve was partially cupped. When she was first admitted to the hospital I gave her three very active sweats, with injections of pilocarpin and hot-water bottles and blankets. The morphine was gradually diminished from one and half grains per day to none at the end of a month. During this time she was very nervous and passed through the usual suffering that these cases have to endure when the morphine is first withdrawn or lessened.

During the active stage of the neuritis the patient had the galvanic current from 3 to 5 M. A. daily, placing the positive pole on the eyes. After the inflammation had disappeared and the atrophy commenced to show itself, the negative pole was used on the eye and strichnine gr. 1/30, given hypodermically; and later strychnine, gr. 1/15, in combination with thiosinamin, gr. 1, was given hypodermically into the muscle of the arm every other day. Neither seemed to do any good, as she did not gain any more vision than she had when the strychnine was commenced, which was (and now is) 20/70, in the left eye only.

Now the question is, what part did the stopping of the morphine play in causing the glaucoma and optic neuritis? The glaucoma probably came on as it does in other cases, possibly from the nervous

strain caused by worry over the condition of her husband; but we can hardly hold that responsible for the neuritis, nor do I think we can lay it to the stopping of the morphine. Under the present law there are hundreds of cases where morphine is being stopped, and no eye troubles. In the Metropolitan Hospital, Blackwell's Island, where I am the visiting oculist, they have treated over eight hundred morphine cases, shutting it off suddenly; and there has been no trouble with eyes as a result.

40 East Forty-first Street.

JUST GRIP, THAT'S ALL

When your head begins to ache and your eyes feel sore,
And your knees act wobbly when you walk along the floor,
And sharp, jerky pains start a-shootin' up your back,
And you wonder what on earth has hit you such a whack;
Your eyes start to run and often do you sneeze,
And the outside air seems to boil and then to freeze.
You don't care a rap whether spring has come or not,
All you know is a bunch of troubles you have got.
Don't think that you are dying or the millenium is here,
And that grim Death is calling you in tones so deep and drear
Just see your family doctor—he'll give you a little tip
Which will sound like this: "Old man, you've got the grip."

—*Googie's Gurgles.*

EYE AND EAR SURGERY AND PROTHESIS IN 1634

Ralph I. Lloyd, M. D., O. et A., Chir.
Brooklyn, N. Y.

THROUGH the courtesy of Mr. Paul Hoeber, owner of the book, I was permitted to look over the Johnson Translation (1634 A. D.), of the Surgery of Ambrose Parè.

According to our modern idea the author was rather diffuse, and in addition to giving the anatomy of the human body as an introduction to the study of surgery, goes into the surgery of each part; describes many strange animals even as Caesar did when he was building his bridge, which was later to perplex the Latin student.

Caesar described a wonderful animal with a single horn and the body of a horse, and many think he was describing the animal which later flourished on coats of arms as the unicorn. So our friend Parè describes the opossum and gives a wonderful picture of one with the young upon her back, which position they keep by winding their tails about the forward turning tail of the mother. The rhinoceros is found in all his glory, and instead of the thick, tough hide, as we think of it, we see large, heavy plates which remind us of the alligator on a huge scale. He describes the recently introduced war agent, gunpowder, and winds up with a description of his travels abroad. Perhaps some of our modern surgeons, awaited at the dock by reporters who are very much surprised to find them willing to talk, got their cue from the "Father of Modern Surgery." Of especial interest to the oculist and aurist are the sections on the eye and the suggestions for false eyes and noses. Parè lived in the age of what might be called, after the fashion of modern prize ring, in-fighting.

With the sword and pike, wounds of the face were common and the loss of an ear or a nose was anything but unusual. His diagnostic acumen is evident in the section on cataract, wherein we read that cataracts which are yellow in color give an excellent prognosis, but those with a greenish cast are best left alone. Who needs to be told that the surgeon of that time without ophthalmoscope or microscope to tell him of the pathology of the angle of the anterior chamber,

found glaucoma a disease too difficult to control. His speculum (see illustration) with the little slit in the outer side "is so made that it may be dilated and contracted according to the greatness of the eyes." He recommends cheese curds to be applied in case "strange bodies taken out." "The milk of a woman which suckles a girl (for that is reputed the cooler) mitigates paines and cleanses, if it be milked out of the Dug into the eye; to which purpose the blood of Turtles, Pidgeons or Chickens much conduces, being dropt into the eye by opening a vein under the wings." His suggestions for false eyes made of gold or silver are very practical (see illustration), but we wonder at the alternative, which is a wire covered with silk with a leather section to rest on the lids, and to be painted to resemble an eye and held in place by a loop which ran back to the ear. The false noses with moustache were to be held in place by strings.

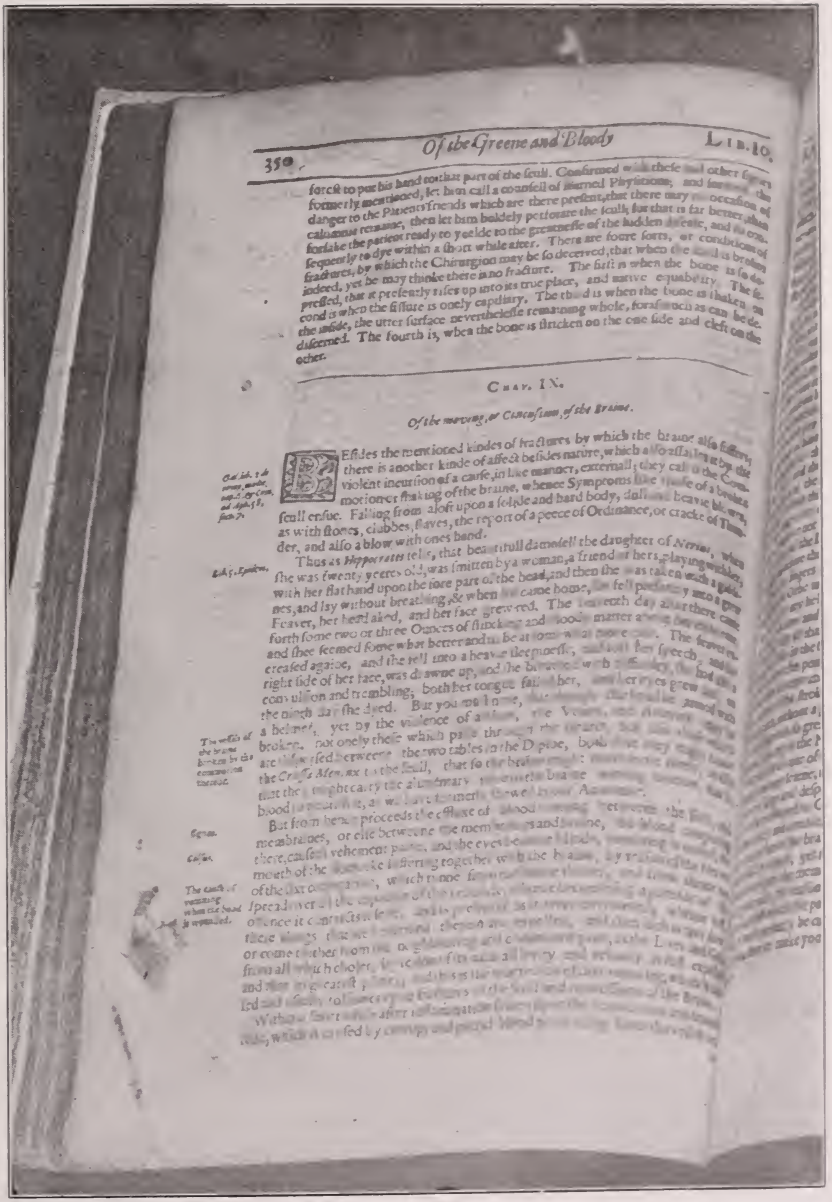
He copies from Hippocrates a description of brain abscess or meningitis, which would interest the ear surgeon.

It seems the daughter of a king was struck playfully by a companion and was taken with a giddiness and lay without breathing. "She fell presently into a great fever, her head ached and her face grew red!" At this point we would recommend belladonna. "The seaventh day after there came forth some two or three ounces of stinking and bloody matter about her right ear. The feaver increased againe and she fell into a heavy sleepinesse, and lost her speech, and the right side of her face was drawn up, and she breathed with difficulty. She had also a convulsion and trembling; both her tongue failed her, and her eyes grew dull; on the ninth day she dyed."

A glance through such a book gives us much satisfaction because we can congratulate ourselves upon our greatly increased armamentarium and the laboratory facilities with which we are blessed, and we can most heartily and truly express our pride in our medical forefathers because they did so well with what they had.

(See illustrations, pp. 767, 769, 771).

450 Ninth Street.



350 Of the Greene and Bloody Lib. 10.

forceit to put his hand to that part of the scull. Confirmed with these and other figures formerly mentioned, let him call a counsell of learned Physitions, and foretell the danger to the Patients friends which are there present, that there may be occasion of calumnie remaine, then let him boldely put to sure the scull, for that is far better, than forsake the patient ready to yeelde to the greatneffe of the hidden disease, and frequently to dye within a short while after. There are foure sorts, or conditions of fractures, by which the Chirurgion may be so deceived, that when the scull is broken indeed, yet he may thinke there is no fracture. The first is when the bone is so depressed, that it peeleanly rises up into its true place, and naive equability. The second is when the fissure is onely capillary. The third is when the bone is shaken on the inside, the utter surface nevertheleffe remaining whole, for as much as can be discerned. The fourth is, when the bone is stricken on the one side and cleft on the other.

Chap. IX.

Of the moving, or Concussion, of the Braine.

Besides the mentioned kindes of fractures by which the braine also suffers, there is another kinde of affect besides nature, which also suffers by the violent incution of a curfe, in like manner, externall; they call it the Concussion, or motion of the braine, whence Symptoms like those of a broken scull ensue. Falling from aloft upon a solide and hard body, shaking, heavie blowes, as with stones, clubbes, staves, the report of a peece of Ordinance, or cracke of Thunder, and also a blow with ones hand.

Thus as *Hippocrates* tells, that beautifull damosell the daughter of *Nerius*, when she was twenty yeeres old, was smitten by a woman, a friend of hers, playing wantonly with her flat hand upon the fore part of the head, and then she was taken with a giddinesse, and lay without breathing, & when she came home, she fell presently into a great Feaver, her head ak'd, and her face grew red. The seventh day after there came forth some two or three Ounces of stinking and bloody matter at one nostrill, and thee seemed some what better and to be at some what more ease. The fourth day she was created againe, and she fell into a heavie sleepinesse, and lost her speech, and the right side of her face, was drawne up, and she brawled with a shaking, and the head convulsion and trembling; both her tongue fail'd her, and her eyes grew red, the ninth day she dyed. But you will say, that though the head be armed with a helmet, yet by the violence of a blow, the Vessels, and Membranes are broken, not onely those which pass through the Sutures, but also those which are reflected between the two tables in the Diploe, but these may easily be that they might carry the alimentary nourishment to the bone. blood is necessarie, as we have formerly shewed in our Anatomie.

But from hence proceeds the effluxe of blood, running between the Membranes, or else between the membranes and braine, the blood there, causeth vehement pains, and the eyes become blood-shotten, distorted mouth of the stomacke suffering together with the braine, by reason of the of the like occasions, which cannot speak distinctly, because the offence it cannot easily be, and by reason of the offence it cannot easily be, and by reason of these things that are required thereto are expelled, and then also the or come thither from the stomacke and chiefe parts, as the Liver, and from all which choler, by reason of its acrid property and vehemency in and then in greatest plenty, and this is the reason of their coming long, and ill-

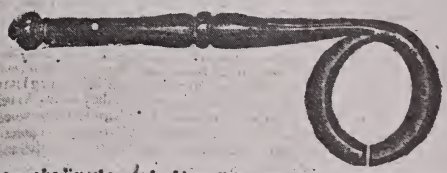
Without fever and the above mentioned symptoms, from the corruption and stinking ichor, which is caused by corrupt and putrid blood

CAP. XXIIII.

Of the wounds of the eyes.

WOunds of the eyes are made by the violence of things prickings cutting, bruising, or otherwise loosing the continuity. But the cure must alwayes be varied according to the variety of the causes and differences. The first head of the cure is, that if any strange and heterogeneous body shall be fallen into the eyes, let it be taken forth as soone as you can, lifting and turning up the eyelid with the end of a *spatula*. But if you cannot discerne this moate or little body, then put three or foure seedes of *Clary*, or *Oculus Christi* into the pained eye. For these seedes are thought to have a faculty to cleanse the eyes and take out the moats, which are not fastned deepe in, nor doe too stubbornely adhere to the membranes. For in this case, you shall use this following instrument, for heerewith wee open the eye-lids the further, putting it betweene them and the eye, and also keepe the eye steddy by gently pressing it, that so with our mullets wee may pull out the extraneous body; this is the figure of such an Instrument.

The delineation of a Speculum oculi, fit to dilate and hold asunder the eye-lids, and keepe the eye steddy; it is so made, that it may be dilated and contracted according to the greatnesse of the eyes.



All strange bodies taken out, let this medicine be put into the eye. Take the straines of a dozen egges, let them be beaten in a lead Mortar with a little Rose water, and so put into the eye; but let this repercussive be layd upon the eye and the neighbouring parts. R. *albumin ovor. nu.* iiij. *pulver. alaminis rochæ combust* ℥ij. *sanguinis Draconis* ℥ij. *aquæ rosar. & plantag. an.* ℥ij. *agitentur simul*, make a repercussive, which you may frequently use. Or else apply cheese curds well wrung, mixed with Rose water, the white of an Egge, and as much *acacia* as shall suffice. This which followeth doth more powerfully stay the flowing humor. R. *gum arab & tragac. an.* ℥ij *pfidij cydon. semin. portul. plant. semash. an.* ℥ij *fiat mucag. cum aquis plantag. solan. & rosar. concinnetur collyrium*, of which you may drop some both within and about the eye.

A repercussive to be put into the eye.

Divers repercussives to be applyed to the eye.

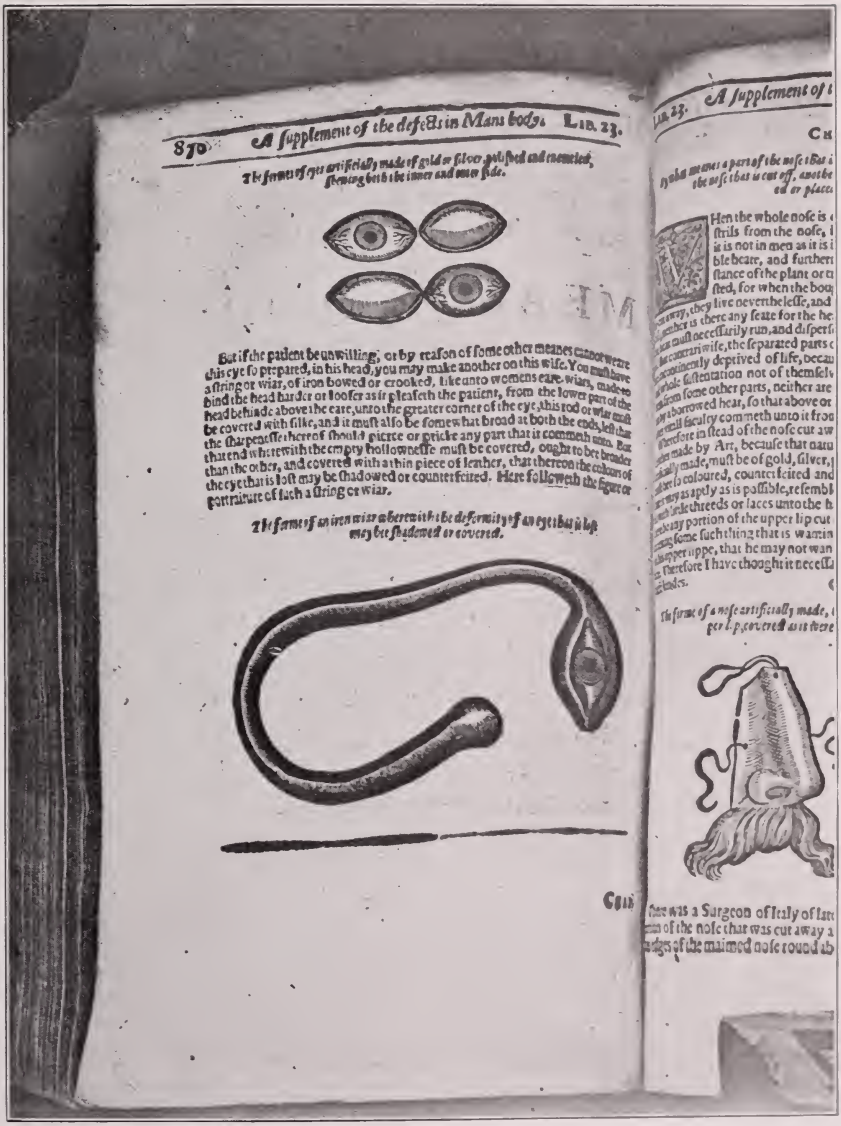
But note, that all such remedies must be applyed warme, both that they may the better penetrate by their moderate heate, as also for that all actuall cold things are hurtfull to the eyes and sight, because they dull the sight by incrustating the visive spirits. For I have knowne many who have become dull of sight by the frequent using of medicines actually cold to the eyes.

Things actually cold are hurtfull to the eyes.

I have on the contrary seene not a few, who have recovered with the fit use of such like medicines, who have had any part of their eye (so it were not the *pupilla* or Apple of the eye) so pricked with a needle or bodkin, that much of the watrish humour ran forth thereat.

The milke of a woman which suckles a girle (for that is reputed the coolar) mitigates paine and cleanses, if it bee milked out of the Dug into the eye; to which purpose also the blood of Turtles, Pidgeons or Chickens much conduces, being dropt into the eye by opening a veine under their wings. Also this following cataplasme allayeth paine and inflammation, and hinders defluxion, being applyed to the eye and

Another excellent remedies for the eyes.



870 A supplement of the defects in Mans body. Lib. 23.

The forme of eyes artificially made of gold or siluer, polished and enamuled, shewing both the inner and outer side.

But if the patient be unwilling, or by reason of some other meanes cannot weare this eye so prepared, in his head, you may make another on this wise. You must have a string or wiar, of iron bowed or crooked, like unto womens eare-wiars, made to bind the head harder or looser as it pleaseth the patient, from the lower part of the head behinde above the eare, unto the greater corner of the eye, this rod or wiar must be covered with silke, and it must also be somewhat broad at both the ends, lest that the sharpenesse thereof should pierce or pricke any part that it commeth unto. But that end whereof the empty hollownesse must be covered, ought to bee broader than the other, and covered with a thin piece of leather, that thereon the colour of the eye that is lost may be shadowed or counterfeited. Here followeth the figure or portraiture of such a string or wiar.

The forme of an iron wiar wherewith the deformity of an eye that is lost may be shadowed or covered.

Chir

Lib. 23. A supplement of t

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ORBITAL OEDEMA

J. J. Wynn, M. D.,
Louisville, Ky.

MRS. D., age forty-five years, came to me March 31, 1914, complaining of swelling of both eyes and beginning blindness. Her health had been good until four years ago, when she suffered with asthma, in all probability of cardiac origin, which was relieved and her health restored until the following year, when she first noticed the appearance of localized swellings of the feet and limbs, of transitory nature, with slight dilatation of the veins.

In the fall of 1913 she had the first attack of swelling, involving the orbits, face and forehead. This attack came on suddenly. The swelling was dusky red in color, extending to cheek and forehead; there was considerable chemosis of the conjunctiva; temperature from 101 to 102, with gastric symptoms. This attack lasted several days, when it gradually disappeared, except some puffiness of the orbital tissues, but not enough to interfere in any way with vision or motion of the eyes.

There had been four similar attacks previous to her coming to me; the last one, about eight weeks ago, was the most severe of any, and on its subsidence she noticed some impairment of her vision.

On questioning, the following history was obtained: Her mother died at the age of sixty-nine years of Bright's Disease; father at the age of eighty, of senility; one older sister in good health. Her own health has been good, except the slight attacks of asthma some years ago. She has had no children nor miscarriages, and for the past six to eight months has been going through the climacteric, to which she attributed the localized swellings on the body.

Vision, O. D. 20/100; O. S. 20/30. There was considerable oedematous swelling localized to the orbits of both eyes; no exophthalmus; some chemosis and dilatation of the conjunctival vessels; no muscular paralysis, nor had there been at any time any diplopia; the pupils reacted to light and accommodation; no increased tension of the eyes, and on ophthalmoscopic examination there was found optic atrophy.

of both eyes, but more marked on the right side. The field of vision showed concentric contraction on the right side and about normal on the left side.

No nasal obstruction nor signs of sinus disease.

Dr. Askenstedt, to whom she was sent for a physical examination, reports: Knee jerks normal; no static ataxia; urine normal; mitral regurgatation and dilation of the heart; liver enlarged and lowered; temperature 100, and the pulse 116, showing no cerebral or spinal lesion, but a poor circulation, and areas of erythema nodosum on chest and abdomen.

One week later she reported feeling some better, but in three days after she had an attack of nausea and vomiting lasting all day, but not cerebral in type. Again in three days she reported with an increase of swelling extending to the cheek, with marked chemosis, preventing complete closure of the lids. The swelling was brawny-red in color, clearly marked from the surrounding tissue. Vision was O. D. 20/40, O. S. 20/50. I next saw her May 6th, three weeks from the last visit, at which time the vision was reduced to counting fingers at from twelve to eighteen inches. The atrophic condition of the nerves was more marked at this time.

On May 18th she reported, feeling better, with vision O. U. 20/100, although there was no change in the appearance of the oedema of the orbits, nor had there been at any time since she came to me, but the swelling of the face had disappeared. She was now put on K. I., sat. sol., five drops three times a day, with hot applications to the face, and put to bed. This seemed to help her, for one week later she reported with vision of O. D. 20/50, and O. S. 20/100, but complained of some gastric symptoms with palpitation and diarrhoea. This was followed by a severe dysenteric attack lasting several weeks, with great exhaustion and emaciation, and a return of the oedema of the face, on the chest and extremities. The vision now became reduced to seeing moving objects, from which there has been no improvement.

In arriving at a diagnosis the difficulty was to associate the various symptoms into a clinical entity.

The optic atrophy of course suggested some cerebral or spinal disease, which was eliminated by a thorough mental and physical examination.

The local swelling of the face and orbit resembled, when at its height, an attack of facial erysipelas, and was at first diagnosed as such by her physician. The swelling was clearly defined from the surrounding tissue, the temperature was high, from 101° to 102°, and there was associated the usual gastric symptoms of that disease; furthermore, according to Fuchs[1], "Facial erysipelas involving the cellular tissue of the orbit is frequently followed by optic atrophy, with extreme attenuation of the blood vessels," and had it not been for discovering areas of erythema nodosum on the trunk and extremities we would have agreed that it was a case of erysipelas.

The accessory sinuses, especially the frontal and ethmoidal, are frequent causes of orbital oedema, as shown by a case reported by Posey[2], in which there was marked circumscribed orbital oedema of the upper lid with proptosis and interference with motion of the eyeball. In the case reported there was no history of sinus disease and repeated examinations failed to find any pus in the middle meatus.

Tumors of the orbit may cause oedema by pressure on the ophthalmic vein, but we would also find exophthalmus and diplopia, and the oedema would be localized to one side.

Cavernous sinus thrombosis, which may occur from frontal or sphenoidal sinusitis, cellulitis of the neck or septic conditions of the petrous bones, are also frequent causes of orbital oedema, and they also cause proptosis, chemosis of the conjunctiva, congestion of the retina and choked disc if the retinal veins are affected, as usually is the case, and also oedema of the face when the thrombosis extends to the facial vein.

Erythema nodosum is an acute inflammatory disease of the skin, characterized by the appearance of elevated nodules of various size and color, at first red, then brawny to yellowish, as a bruise. They are found most often on the extremities, abdomen, chest or face, developing rapidly, and after four to five days or a couple weeks gradually disappear. There is associated with the onset of the attack chills, fever and rheumatic pains. At its height the swelling is tense and red and gradually fades out. This disease is found most often in early life, and during the spring and fall months, and is often associated with rheumatic fever. While I could find no reference to the occurrence of optic atrophy in this disease, "we know that any severe orbital inflammation may cause an atrophy by pressure on

the nerve, or by thrombosis, as pointed out by Knapp, or by causing a neuritis,"[3] and in this case there was undoubted pressure-atrophy as shown by the changeableness of the vision—being better when the patient improved and worse with each recurrence, until there was practically total blindness.

[1]Fuchs—Text Book Ophthalmology.
[2]Posey—*Annals of Ophthalmology*, April, 1912.
[3]American Text Book, Eye, Ear, Nose and Throat.
Atherton Building.

"We are living superficial lives nowadays. This is the age of automobiles and our minds have gone motoring."—President J. G. Schurman.

Recipe to make a specialist: One year and a half general practice, two medical publications, one paper before a medical society, discussion of every paper remotely associated with subject (always interpolating "we rhinologists," for example), a trip abroad for at least two months, an office nurse and a raise of fee.

The difference between a doctor and a professor is twenty-three dollars.

The Medical Pickwick will confer the "Iron Cross" as follows:

Rhinologist: Who doesn't consider tonsillotomy a dangerous operation—for the general practitioner to do.

THE RATIONALE OF A NEW TREATMENT FOR THE ACUTE FRONTAL SINUSETES*

DOUGLAS MACFARLAN, M. D.,
Philadelphia.

IT is lamentable how often we find ourselves falling into the humdrum use of remedies, with an unconsciousness, a thoughtlessness and almost purposeless inattention to what we are doing. Here we are using a remedy in a particular case. But have we ever stopped to analyze "Why?" Often enough the article we select has attached itself to us upon the recommendation of an acquaintance; or, again, we have seen it advertised so often that it has gradually insinuated itself into our minds. Take, for example, two widely used proprietary preparations, argyrol and formamint. We find them in use everywhere. But stop and ask the subscriber for information and experiences; ask him what is the rationale of treatment when he calls on them.

And what is the consequence of this heedless prescribing? Only this: The careless prescriber will try everything and anything that comes along, and he tries it on every sort of condition. He naturally gets no results and finds, if he is conscientious, a continuous dissatisfaction with his remedies. He contradicts flatly anyone who may have shown favor to a certain remedy. On the other hand, the good prescriber studies his remedy and, according to his knowledge of its physiologic effects, selects his case and gets results.

These remarks I think germane to the subject I approach, for it was by the careful study of this particular remedy that I was able to apply it to relieve a most painful condition.

The remedy in question is the new salt of mercury, made by the presence of potassium iodid and the red mercuric iodid in water. K_2 Hg. I_4. Its properties are many, but its power as a strong irritant to mucous surfaces I found to be of great service in my nose and throat work. A one per cent. solution used as a nasal spray or upon an applicator produces a profuse rhinorrhoea and lacrymation, with sneezing and stinging of the nose. A free, thin secretion is poured out for several hours.

*Candidate's thesis for admission to O. O. and L. Society.

Now in the acute sinus conditions, that is, in the common acute catarrhal or muco-purulent infection of the sinuses, we have essentially an extension of a catarrh into a large cavity with poor drainage The turgescence of the mucous membrane lining the openings of these cavities tends to make the drainage even worse. In the case of the frontal sinus the drainage is particularly poor, obstruction takes place early and is often complete. It is my belief that the backing up of the secretions into the sinus is largely responsible for the terrific pains of which these patients complain. Acting upon this assumption I struck upon this salt of mercury, the double iodid, to do the work I wanted; namely, to produce both a counter-irritant effect and a thinning of the muso-pus by the free secretion started up. The effect was very gratifying and I have had now sufficient cases to confirm the value of the proceeding.

Case I. W. I., janitor, comes with marked pain and tenderness over both frontal sinuses and thick pus pouring over the lower turbinates anteriorly. The trouble is a recurrence of former similar attacks (this being the fifth). Today is the second day of his trouble Pain comes on in the early morning and lasts with insufferable severity until early in the afternoon, when it subsides, leaving a "bone soreness" in the frontal region.

The mucous membrane was shrunken with cocain and the anterior ends of the middle turbinates were removed. No improvement in condition the next two days. Double iodid spray (one per cent.) was ordered for the early morning when the pain began. The relief was remarkable. Rhinorrhoea was profuse and thin, "carrying everything before it." The patient was only too glad to stand the annoyance of the constant sneezing and smarting to be relieved of the intolerable pain. The relief continued until all symptoms had disappeared by what was taken to be the ordinary self-limitation of the condition.

Case II. Similar to the above, that is, acute muco-purulent infection of the frontal sinus on the left side, pains worse in the morning, wearing off toward the afternoon. This case was more protracted and ran along for about ten days until it subsided. All the while the double iodid gave relief. The patient having used his solution up was without it one morning and found a return of the marked pain.

Case III. Young neurotic woman who had refused operation proposed by another man drifted into my hands. Her pains in the

frontal region came on in the night and lasted until about noon the next day. They were so severe that she was "beside herself" and began talking suicide. Transillumination showed both sinuses dark; x-ray likewise confirmed the location of the trouble. The nose was not catarrhal, neither was there pus on either side. Postural tests gave a suggestion of a heavy mucus from under the middle turbinate. She had been sick a week and this was her first attack. Double iodid gave great relief and carried the patient on to a subsidence of the symptoms.

I have had numerous other cases of acute frontal sinusitis that have given me as good results, and two sphenoids that were helped. This brings me to another feature of the remedy, its high antiseptic value.* It is a powerful germicide in the weakest solutions, averaging a germicidal strength of 1 :60,000. In the sphenoid cases there was no pain, for drainage was fair and was further improved. But the purulent element was rapidly relieved. This was probably due as largely to the rivived tonus given to the mucous membrane by the stimulant action as to the germicidal value.

I offer the procedure as an expedient that will give relief in a temporary but very painful condition. These cases are usually self-limited and are usually recurrent. So far as I know the remedy has no control over recurrences. The finding of this useful drug, or rather the value I have received from making a thorough study of it has guided my practice toward an axiom of "Know what you use, learn how to use it and use only what you know about."

*Notes in the Study of Potassium Mercuric Iodid. Douglas Macfarlan. *Jour. A. M. A.*, January 3, 1914. LXII, 17-19.

ACUTE LEUKEMIA AS FIRST MANIFESTED IN THE TONSILS*

George James Alexander, M. D.,
Philadelphia.

WHILE acute leukemia is not an uncommon disease it occurs so infrequently that it may not be the privilege of every laryngologist to meet with even one case in an entire career, yet it is of particular interest to him, because in most instances its onset or its presence will first be manifested by characteristic lesions in the nose, throat or mouth as an apparently simple lacunar tonsillitis, or as an ulcer or hemorrhage of the mucous membrane; hence the importance of having in mind possibilities of more grave and remote conditions while viewing such lesions as mentioned above.

The case that is about to be presented for your consideration was first seen by the writer August 29, 1913, who after two months of treatment with variable success decided that it surely was something of much greater seriousness than is usually attended by such lesions as were apparently present, and the patient was sent to the Hahnemann Hospital, where Dr. S. W. Sappington made the diagnosis of acute leukemia and has since reported the case as such.

However, the object of the author is not to report a case of acute leukemia, but to bring the experience gained from an interesting and instructive case before this distinguished society for the purpose of emphasizing the responsibility which may attend apparently simple and harmless lesions with which the laryngologist is the first to come in in contact, and to endeavor to picture to you the clinical course, together with the morbid anatomy, and its similarity in appearance (locally) to other laryngological diseases during the progress of its course.

Mrs. B., age forty-two years.

Family History: Father died at the age of sixty-four years; cause, pneumonia; mother died at the age of seventy-six years of general weakness; three sisters and one brother living and well.

*Read before the O. O. and L. Society, July 2, 1914, Atlantic City.

Previous History: Measles and pertussis when a child. Three normal pregnancies. Eight years ago she had a stiffness in the right arm which her physician pronounced syphilitic rheumatism; she had a rash on her chest at this time, but no headache or loss of hair, and denied having either a primary or secondary lesion.

Present History: Outdoor work (demonstrator); the patient complains of feeling weak and run down in health for nine months, growing worse. Recently she has had a succession of furuncles on the hands, arms, axilla and neck; the first one started as a pimple and lasted two weeks, due to an infection, the result of opening with a pin. Has since had pinkeye and an hordeolum. The furuncles were accompanied by marked nausea and weakness. For six days before seeking treatment she had pain in the throat, referred to the thyroid cartilage, with dyspnea and dysphasia, suggestive of a laryngeal abscess (which was not found).

Examination: Temperature 100 F. Pain on pressure in the region of the right tonsil; anterior cervical gland on the same side was enlarged and hard; tonsil bluish-red and swollen, with little gray patches over the lacunae; these coalesced two days later, forming a membrane in the center of the lower half of the tonsil, which bled slightly when touched. Under this membrane an inflamed ulcer formed with irregular, sharply outlined edges (dug-out type). During the following seven days the ulcer was progressive, forming a deep gangrenous excavation covered by a foul-smelling, thick, soft, dirty, greyish-yellow membrane; the ulcer eventually involved the posterior faucial pillar, which together with the uvula was edematous.

On two occasions during this seven-day interval Dr. E. A. Steinhilber examined two cultures taken from the ulcerated area for the possible presence of the bacillus fusiformis, the spirochaete denticola and the Klebs-Loeffler bacillus—thinking of the possibility of the lesion being Vincent's angina or diphtheria. On both occasions the doctor reported his findings as follows: Bacillus fusiformis, spirochaete denticola and the Klebs-Loeffler bacillus not present; streptococci in abundance, and staphylococci in less numbers. The only conclusion remaining was that we had to deal with an ulcer due to a mixed infection.

When the membrane was finally removed under the local application of the tincture of iodin, the cavity had become more shallow; the

base was covered with fine pin-point granulations or hemorrhagic areas. The ulcer eventually disappeared, leaving a white scar on the tonsil. The scar was not shrunken, as is found in healing of typical syphilitic ulcers.

During this time the tongue was heavily coated; there was a large quantity of bad-tasting secretion in the mouth which nauseated her and caused vomiting; loss of appetite and marked interference with breathing and swallowing caused by a lump in her throat, of which she was always complaining; terrific headache in left frontal region and in the right ear; pulse weak; temperature 101.2 F.; bilateral adenexia; great general weakness; very pale and aenemic.

On the twelfth day after first seeing her and the third day after the administration of iodid of potassium, all symptoms had subsided except the weakness and anemia. The patient came to the office for medicine and observation during the next six weeks, after which time I was again sent for—October 26, 1913. She was in bed, with pain in the throat and aching all over the body; temperature 101, which later went up to 101.3 F. The right tonsil was slightly swollen and red, as was the pharynx on the same side. Some white spots were now present on the left tonsil. Several days later there was increased anemia and emaciation, great weakness, slight sweating, pulse 130, pain in both inguinal regions and in the region of the spleen. She was sent to the hospital and further observations were as follows:

Pain in the mediastinum, in the left hypochondrium, left axilla, and in the cardiac region. Spleen and liver moderately enlarged with tenderness on palpation. Severe dyspnea toward the end of the examination. The laboratory findings were, *blood*—increase in white cells; *sputum*—pneumococci; *urine*—albumen, sugar, granular casts, pus and blood cells.

Autopsy Findings showed a slight enlargement of the posterior cervical glands; bases of both lungs edematous; pericardium contained a small amount of clear fluid; musculature pale; slight sclerosis around the coronary arteries orifices and valves. The left kidney showed marked paleness on section in contrast with the mottled appearance of the right one, and had the general appearance of a contracted kidney except that the organ was smooth. The mucous membrane of the esophagus and stomach was pale and the retroperitoneal glands

were somewhat enlarged and pale; sections of the rib, vertebra and lower third of the femur showed a greyish-red marrow, typical of acute myeloblastic leukemia.

There is nothing definitely known as to the cause of leukemia (Osler), though it is reasonably certain that it is the result of an infection with its port of entry favoring lesions of the mouth and throat (bucco-pharyngeal).

The buccal or pseudoscorbutic group includes swelling, tenderness and oozing of the gums; submucous hemorrhages and areas of necrosis along the alveolar processes; stomatitis that is often gangrenous; and in some cases hemorrhage following the removal of teeth is the first symptom. (Emerson, Grawitz.)

The pharyngeal group usually begins as an apparent acute lacunar tonsillitis, or as diphtheria, as did the cases of Edsall, Patior, Dehon, Surmount and the writer.

Lazarus reported a case in which the tonsils were covered by a purulent exudate or membrane containing streptococci and staphylococci, as in this case.

It is interesting that the cervical glands may become enlarged before the tonsillar signs appear, which is considered evidence against the primary nature of the latter lesion.

There are two main types of this disease, namely—

The spleno-medullary, which is the chronic form and much the commonest.

The lymphatic, the acute form, which is comparatively rare and is more rapid and fatal.

With these two types may occur a number of combinations or varieties of the disease: *i. e.*, hemorrhagic, cachectic, acute infectious, etc. The latter type, to which the present case belongs, may simulate typhoid fever, pneumonia, acute intestinal intoxication and septicemia.

There is thought to be a change in the blood or a morbid condition of the body upon which is grafted an infection by means of such lesions as injuries, furuncles, ulcers of the liver, spleen, stomach, intestines, and on the tonsils, as was found in the case under consideration.

Schupfer brought evidence against the infectious nature of this disease by injecting blood from such a patient into cancer cases, which as a rule react readily to acute infections. The result caused

him to doubt the infectious nature of acute leukemia, but his findings do not convince the writer.

If with the early enlargement of the spleen and liver there is a clinical picture of leukemia the diagnosis is rendered less difficult.

However, great difficulty is sometimes experienced in determining the acuteness of the case, since it is very hard to rule out a preceding latent chronic leukemia. At all events a diagnosis cannot be made without a blood examination.

It has already been mentioned that during the course of acute leukemia many symptoms, subjective and objective, are suggestive of other diseases, which for the sake of brevity and convenience I will classify into two groups; namely, general and local.

The general group includes, for example, typhoid fever, pneumonia, pernicious anemia, septicemia, cachexia, and diseases affecting more particularly special organs, the details of which I will not attempt to enter into.

The local group, however, is of special interest to the laryngologist; therefore I will confine my remarks to some of their features manifested in the mouth and throat for which acute leukemia might be mistaken during its earlier stages, for instance.

(a) Acute lacunar tonsillitis. The patient is not so anemic, the onset is more sudden, pain is usually directed to the tonsils, prostration in the first days is greater, there is rigor, the temperature is usually higher, 101 to 105 F., and the voice has the characteristic sound of an obstruction in the throat. There is rarely a membrane (coalescence of the islets in the lacunae) and it does not spread to the pillars.

(b) Diphtheria is clinically perhaps the most difficult lesion to eliminate when the condition reaches the ulcerative stage. It begins at first with a thin white film and soon becomes a yellowish-grey membrane, the removal of which leaves a raw, bleeding surface, while the membrane formed in leukemia does not start as a film, is more easily removed, and on removal there is bleeding (or hemorrhagic points) and spreading to the faucial pillars is not so rapid. In diphtheria the breath is more fetid, the ulceration more shallow and rapid, the parts have not the peculiar bluish tint and the patient seems more toxic. Nevertheless a bacteriological examination is imperative. About this time the picture is strongly suggestive of—

(c) Vincent's angina, with its high, irregular edges and deep

center, bleeding points under a so-called membrane, etc. It was indeed this disease with its many identical local symptoms that caused the writer the greatest difficulty in his process of elimination. Though it occurs chiefly in children the constitutional symptoms are, as a rule, not severe, and only in pronounced cases the process extends over the entire tonsil and pillar.

(d) Syphilis. In this disease a positive history is of great aid. It is most likely to be the tertiary form, with its period of infiltration and induration, which finally softens in the center forming the ulcer (gumma) with its thick indurated, well-marked, vertical border, adherent slough and purplish-red surrounding tissues, slow process, inconstancy of pain and its tendency to attack the soft palate and faucial pillars. The tonsils are more frequently invaded by the gummatous infiltration. Then there is the serpiginous ulcer, which is more superficial and irregular in outline, and lastly the shrunken scar left by the gumma.

(e) Epithelioma. Much could be said of this disease, but a few of the more characteristic findings will suffice. It begins as an uneven, mulberry-like growth, at first confined to a small area, but as it breaks down and extends its invasion of the surrounding tissues is rapid. As it follows the direction of its roots the surface is fungating and irregular, the lesion bleeds easily, there is induration of its edges and the surrounding tissues, early enlargement of the glands, early and sharp pain increasing in severity, dreadful odor, cachexia and rapid wasting.

(f) Tuberculosis, when present in the tonsil, is usually of a latent form, ulceration being comparatively rare. The acute ulcerating type (miliary) prefers the mucous membrane of the fauces of the soft and hard palates, with first an eruption of pearly-grey or yellow spots (similar to lacunar tonsillitis), which rapidly break down, coalesce and form a sloughing area covered by a dirty-greyish-white deposit, leaving a nibbled-like raw bleeding surface. On being wiped away the immediate surrounding tissues are inflamed and edematous, while the more distant ones are pale.

A brief summary, then, of the case in mind will show that there were a number of symptoms and conditions typical of acute leukemia, as well as some that were peculiar to this case. Of the first group there were, for instance,

1. Great general weakness (most prominent).
2. Headache and nausea.
3. Continuous fever.
4. Well defined mouth lesions, beginning as little islets in the lacunae of the tonsil, with later formation of the deep ulcer previously described.
5. Enlargement of the various groups of glands.
6. Constant pain in the left hypochondrium and axilla.
7. Enlargement of the spleen.
8. Marked dyspnoea and anemia.
9. Autopsy showed the bone-marrow to be diseased; involvement of the spleen, lungs, heart and kidneys, the deep glands being very slightly affected.

Of the second or special group there were as follows:

1. Absence of hemorrhage.
2. Late ulceration inside of the lower lip when it should have been an early symptom.
3. A well defined exacerbation.
4. Unilateral ulceration.
5. Scarcely any sweating.
6. Ran the course of an acute infection.

During the period of treatment the patient received the indicated remedies, benzol, injections of streptococcic vaccine, etc.

In conclusion the writer wishes to commend Dr. Sappington upon the scientific manner in which he handled the case and thank him for his able co-operation.

1831 Chestnut Street.

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THE PRACTICAL VALUE OF THE LABYRINTH TESTS

George W. Mackenzie, M. D.,
Philadelphia.

During recent years the otological profession has manifested an intense interest in the subject of the labyrinth and has evolved quite accurate tests for the determination of its functions in health and its behavior in disease. To those who have watched the progress of events it appears doubtful if the general profession appreciates fully the uses to which these tests can be applied. To point out some of these uses is the welcome task assumed by the writer in presenting this paper.

There is a prevailing notion among those who have given the subject but little study that the labyrinth tests are of value only in the diagnosis of labyrinth suppuration, and since this complication occurs but once in so many hundreds of cases of ear disease the importance of the subject is to be judged accordingly. In reply to this I wish to say that labyrinth suppuration comprises a very small per cent. of the cases in which the labyrinth tests are of value as an aid in diagnosis.

The various pathologic conditions in which labyrinth tests are of value in diagnosis include:

(1) Diffuse labyrinth suppuration with the classical symptoms of (a) total deafness of sudden onset, (b) rotational vertigo, (c) equilibrium disturbances and (d) spontaneous rotatory or mixed rotatory and horizontal nystagmus to the opposite side. The labyrinth tests will show (e) negative caloric reaction when cold or hot water is applied to the affected ear, (f) diminished duration of after-turning nystagmus to both sides, more especially to the affected side, (g) diminished reaction with the cathode applied to the affected ear as compared with the normal. To complete the picture there should be evidence of acute or chronic middle ear suppuration, otherwise it might be difficult for us to differentiate labyrinth suppuration from eighth nerve neuritis.

(2) Eighth nerve neuritis may show any or all of the symptoms and signs of labyrinth suppuration without the history or findings

of middle ear suppuration, with one exception, and that is a total loss of galvanic reaction on the affected side in those cases in which the function of the nerve is completely interfered with. Whereas, in labyrinth suppuration we find positive but diminished reaction to galvanism, except in rare instances where there is a complicating neuritis, or very late when secondary atrophy of the nerve has taken place.

In the majority of cases of eighth nerve neuritis we have as further aids in the differential diagnosis the following factors:

(a) The history or findings of an acute or chronic infection.

(b) Toxemias of endogenic or exogenic origin.

(c) Rarely is the loss of acoustic and vestibular function so complete as in labyrinth suppuration.

(d) Occasionally the process is bilateral or else other intracranial nerves are simultaneously affected; more often the second, fifth and seventh.

(e) Since syphilis, acquired or congenital, is the most frequent cause, we have the Wassermann test to aid us.

Roughly speaking, the frequency of neuritis as compared to labyrinth suppuration is three to one.

(3) Necrosis of the labyrinth, resulting from the extension of a mastoiditis to the spaces surrounding the labyrinth in those cases which are predisposed by age (*i. e.*, the very young and the very old) and by debility resulting from protracted illness, especially tuberculosis and diabetes.

The symptoms and signs of necrosis may be quite like those of labyrinth suppuration, excepting that in necrosis we usually find associated seventh nerve paralysis, a complication which is rarely found in labyrinth suppuration and then only coincidentally. Necrosis of the labyrinth is an extra-labyrinthine condition, while labyrinth suppuration is an endo-labyrinthine.

As a further aid in diagnosis we have in necrosis the characteristic discharge, thin, dark, gritty and peculiarly offensive. Besides in necrosis we are usually able to detect raw bone by probe sounding. The relative frequency of labyrinth necrosis is about the same as that of labyrinth suppuration.

(4) Circumscribed labyrinthitis in contradistinction to diffuse labyrinthitis. These may be further divided into the irritative or con-

gestive and the destructive or suppurative types. Any of these conditions may or may not be complicated with fistula of the osseous labyrinth.

These circumscribed processes of the labyrinth are complications of middle ear suppuration, concerning which a great deal has been written by numerous authors, including myself. For this reason and from the fact that they comprise a big subject in themselves I would prefer not to discuss them further at this time, but discuss rather some other conditions equally if not more important that have been receiving far less attention. I refer particularly to basal fractures.

(5) Basal fracture involving the middle fossa is a condition vastly more common than any of those thus far mentioned and is one that requires just as complete an examination as a case of suspected labyrinth suppuration, for a proper diagnosis is just as vital to the patient in the one case as the other. A fracture through the petrous bone generally involves the inner ear and facial nerve and the findings are those of acute labyrinth suppuration combined with facial paralysis. The fracture usually extends through the tympanum, when the patient will leak blood-tinged cerebro-spinal fluid through the eustachian tube in those cases where the membrane has escaped the fracture, or through the external auditory canal in those cases where the tympanic membrane has not escaped. The diagnosis should not be difficult to the otologist who understands how to make the functional hearing tests and vestibular tests.

There is another type of fracture through the temporal bone that involves the middle ear and external canal, while the internal ear and facial nerve escapes. In this case a knowledge of the functional hearing and vestibular tests is just as important a diagnostic aid as in the former condition.

Either of these cases may terminate fatally; however, the prognosis is more unfavorable in the former than the latter. Fortunately both are amenable to early surgical interference. In the case of fracture involving the inner ear the prognosis after operation is just as favorable as in the case of labyrinth suppuration. The hearing of course is sacrificed, not by the operation but by the injury that prompted the operation. In the case of temporal bone fracture with intact labyrinth the prognosis after operation is quite as favorable to life as in the other more severe condition, while the prognosis to

hearing should be about the same as that which occurs after the radical mastoid.

The surgeon should not

(a) Postpone operating a case of basal fracture that involves the temporal bone.

(b) Neglect to differentiate, before operation, a fracture through the labyrinth from one through the middle ear with intact labyrinth.

(c) Fail in case of a fracture through the labyrinth to operate on the labyrinth and remove all fragments of bone and permit proper drainage of the middle and if necessary the posterior cranial fossa.

(d) Touch the labyrinth in case of fracture through the middle ear with intact labyrinth, but operate the middle ear, remove all fragments of bone and expose the middle skull fossa for drainage. He may or may not incise the dura according to the indications at the time of operation, as in the case of fracture elsewhere.

Basal fractures involving the temporal bone is a much neglected subject and will continue to be until it is assigned to the otologist to whom it properly belongs. Injuries of the ear belong as much to the otologist as injuries of the eye belong to the ophthalmologist.

(6) Cerebellar abscess and tumors present symptoms and signs that may simulate labyrinth disease; for instance, nystagmus and equilibrium disturbance, and when located in the cerebellar pontine angle we have the seventh and eighth nerve involved; and since the great majority of cerebellar abscesses are secondary to labyrinth suppuration, generally we have a combination of the two processes, and necessarily the symptoms and signs of both. Added to the usual signs of labyrinth suppuration we have in cerebellar abscess the characteristically negative past-pointing sign.

The differentiation of labyrinth suppuration from cerebellar abscess has been written up quite extensively by Newman, Barany and others, and somewhat by myself in the labyrinth papers series, and I will not take it up further at this time.

(7) Vertigoes which come to us complaining of no other particular symptoms require a careful examination of the eyes, including the muscles, the inner ears by the labyrinth tests, the deep reflexes, and in fact in some few cases every organ of the body. It is necessary in some cases to apply the labyrinth tests to make a positive diagnosis of labyrinth or eighth nerve affection—in other cases to

exclude them as the etiologic factor of the vertigo.

Two of the most desperate cases of vertigo which was subsequently found to be due to the eyes had also trouble with the ears. In one case which I reported to the Pennsylvania Homoeopathic State Society the patient came to me complaining of the ears, which I later found to be only a trifle short of normal, the patient having suffered years before with a slight attack of middle ear catarrh. His mind was fixed on his ear because the neurologist who had seen him previously had suggested the ears to him as the probable cause of his vertigo. The other case, even more interesting, was in a prominent Philadelphia physician who had lost his left ear in childhood from a fracture of the skull. The case proved to be one of ocular vertigo.

(8) Every case of suppurative ear disease, and especially those with suspected mastoid or other complication, calls for a careful series of labyrinthine tests. If the tests show an irritative condition of the labyrinth we have a clear indication to operate with the object of aborting a more serious condition that may be pending.

I might go on adding other conditions where the labyrinth tests aid us in the diagnosis of latent ear affections or general conditions of the body in which the ear participates, but it is hardly necessary. I will conclude by saying that the more we learn about the subject and the further we look about us the wider uses we find for the application of the tests.

1831 Chestnut Street.

FARTHER EAST*

TWO MONTHS' CLINICAL WORK IN PHILADELPHIA

WILLARD THOMPSON, M. D.,
Dixon, Ill.

BEFORE leaving Illinois for the East last January I had been advised by Chicago friends to call upon Dr. G. W. Mackenzie, of Philadelphia, for post-graduate work in the eye, ear, nose and throat. On the evening of my arrival I got in touch with him and made an appointment to call at his office the following day.

Incidentally I wish to thank my Chicago friends for directing me to Dr. Mackenzie, for I found him everything I expected to find, and more. Through his efforts I was enabled to put in every hour of the day to advantage. In less than twelve hours I was running on full schedule time, with little if any time for sight-seeing.

We arranged matters so that my morning hours were given to Dr. Frank O. Nagle, whose time is devoted entirely to the eye. To him I owe my knowledge of the use of the retinoscope and ophthalmoscope and the opportunity of observing and examining some very interesting cases in his private as well as clinical practice, such as retinitis pigmentosa, choked disc, optic atrophy, amaurotic family idiocy, beginning glaucoma and any number of cases of retrobulbar disease.

Dr. Nagle's afternoons were devoted to clinical work at Mt. Sinai and Hahnemann Hospitals, where his ability as a refractionist and surgeon is shown. These clinics deserve mention owing to the great amount of material and the rare cases to be seen. At Hahnemann College Dr. Nagle instructs in the histology and pathology of the eye and keeps at the students' disposal one of the best microscopic collections of slides in America.

Dr. Nagle also put me in touch with Dr. Charles Lefever, under whom I received lectures on the muscles of the eye and found them very beneficial, as Dr. Lefever gives you the advantage of his years of experience in the clinics of Jefferson and Mt. Sinai Hospitals.

At one of the weekly meetings I had the pleasure of hearing Dr.

*A reply to a letter from Dr. Burton Haseltine concerning post-graduate experiences in the East.

Wessels, who, as head of the eye department of Philadelphia's Board of Health, gave a very interesting paper on the uses of the retinoscope in examining children. This was made more interesting by my visit to Dr. Wessels' office in the City Hall, where he clearly demonstrated the advantages of the retinoscope in examination of children.

I shall never forget Dr. Herbert Goddard's efforts to make it pleasant for me in Philadelphia, his interest in finding suitable places to live, his generosity in opening his very complete library for my use and his numerous telephone calls to come over to his office to see interesting cases operated. On several occasions I had the pleasure of meeting a number of Philadelphia physicians in Dr. Goddard's office and with them watching his operations, which he explained fully while working. I watched a great many septum operations, but my understanding was made thorough by the coaching received from Dr. Goddard while I had occasion to operate one before several doctors in Dr. Goddard's office.

I deeply regretted my inability to spend more time in Philadelphia, giving more time to the clinics to Dr. Alexander, of West Philadelphia Hospital; Dr. Palen, of Hahnemann Hospital; Dr. Fisher, of Mt Sinai Hospital, and Dr. Douglas Macfarlan's x-ray work on sinuses.

My afternoons were scheduled with Dr. G. W. Mackenzie; every day from 2 to 5 I received lectures in anatomy and pathology of the ear under him, and with his specimens and other equipment the lectures were given in such a clear and concise manner that they were thoroughly understood and remembered, being made impressive by following out Dr. Mackenzie's slogan,

"To learn a thing, tell it:
To understand it, draw it:
And to keep it, do it."

With this always before you the sun was behind the hills before you realized your stomach was getting empty. Dr. Mackenzie made it a point to have students present at his operations at any time of the day or night; on several occasions I was called out of other work to attend some interesting operation. Every Monday I was handed a weekly roster of the evening medical meetings, so that outside of sleeping hours one was in the midst of the medical and surgical whirl. In all of Dr. Mackenzie's operative work I was deeply impressed with his ability as a diagnostician.

In this brief sketch I have tried to outline some of the work to be had in Philadelphia. But to be fully appreciated one ought to go there, and I can truthfully say that you will leave there with the highest regard for the men and pleased with the knowledge you have acquired yourself.

"What do you mean by writing to me that my Jimmie can't pass into the next grade?" stormed an irate female, bursting into the principal's room, "An' after him doin' such grand work all the year."

"Why, Mrs. Flaherty," replied the teacher, "you must know better than that. I've sent you his report cards every month, and you know that his marks have been nearly all D's."

"Indade they have, and yit you say he can't pass. I don't understand it at all, at all."

"I am afraid you don't understand our system of marking. D means deficient, you know."

"Sure I don't know phat that may be, but Jimmie told me all about the letters. Sure D is dandy, C is corking, B is bum and A is awful—an' he got C's and D's every month."—*Harper's Magazine.*

HOMOEOPATHIC MATERIA MEDICA AND THERAPEUTICS

THERAPEUTIC JOTTINGS

(Provings and Clinical Observations with High Potencies)

M. Macfarlan, M. D.

Ailanthus, 45 M.—Mary W., widow, aged 40, medicine every two hours during the day, symptoms after a week. (Had a slight trouble with knee, a sprain; general health otherwise good.) If she touches or presses her lip it will puff up and appear to be sore; there is now a ragged deep little sore near the angle of the mouth; the lower lip has a crop of angry blisters about it. Violent itching sensation about the ear, back of the neck, and less in degree about the face. The skin has divided off into red raised blotches—intense desire to scratch the blotches. A water blister came on end of her thumb; small blisters appeared at the tips of her fingers; her chin one day was a bright scarlet; another day her ear had the appearance of erysipelas from slight rubbing; skin of face very itchy and becomes very red on the least rubbing—an atypical urticaria in clinical appearance.

Aletris farinosa, 45 M.—Rectal pains; rectal tenesmus; in four or five days a severe diarrhoea; painful passages; feeling of exhaustion; dizziness on stooping over; eyes feel sore and dim; *spits a good deal and raises mucus; feels as if she wants to cough but cannot.*

Amm. carb., 5c.—Dry cough at 3 a. m. or toward morning occurs in a great number of provers.

Apis mel., 85 M.—Caused great tearfulness or disposition thereto, verified many times. Often relieved congested and enlarged tonsils. (The remedy's chief keynote, however, is loose bowels of the cholera infantum type.)

Argent. nit., 45 M.—Swollen left side of the face with a great deal of heat and burning; lips greatly swollen; inside of the mouth much swollen; earache; marked soreness in flesh and limbs. Female provers.

Arsen. alb., 6 M.—Ophthalmia with photophobia—often verified—and, of course, faintness, sweats, anxiety, bad dreams, apprehension. Throat sore and painful; "lump in throat."

Aurum triphil., 16 M.—Burning of pharynx and glottis; *very nervous;* raw feeling in chest; picking his nose all the time; light-headed—sleepy. Helped a clergyman's sore throat of years' standing—in fact, cured him.

Proving in a woman: Showed soreness in the feet—pain even on drawing on the stockings. End of tongue sore, round sore spots as if scalded on the end of the tongue. Sore throat. Sensation as if abscess was forming in the left nostril. Nightmare; smothering; hacking cough; mouth very dry but no thirst.

Asterias rub., 5 C.—Pimples on side of nose and chin. Provers were women. Cured many cases where there was a disposition to pimples about the chin, mouth and face occurring in adolescence.

Atropin sulph., 30.—Wonderful effect in relieving pain attending corneal ulceration with violent conjunctivitis; sudden and marked relief from photophobia.

6X given in water every hour produced on the third day great dimness of vision; can't see glassware, such as tumblers and bottles. Pupils not dilated; pain in and through the eyeball; accommodation paralyzed; cannot see to read even when holding the paper afar off; type looks blurred. Previously had acute normal vision. Never wore glasses. These symptoms lasted only a week. Mouth became so parched could not speak without first moistening it. Patient took medicine every hour for two weeks.

Ipecac, 25 M.—violent spasmodic cough; aversion to food.

Kali bich., C. M.—Redness in throat, irritation, swollen tonsils. A valuable remedy in dipheritic sore throat, loss of appetite with hoarseness.

ABTSRACTS

Remarks upon Remedies in Acute Congestion. H. E. Hinsdale (*Medical Century,* June, 1915). Dr. Hinsdale touches upon a subject that calls for an acquaintanceship from the nose and throat man: The "congestive conditions" as so frequently seen in our work and so often of such importance (as in the incipiency of fevers) that we should have ready for use those of our remedies that give the image of the clinical picture. These remedies he covers most thoroughly, showing their shades of distinction.

Aconite, in the very acute congestion, before the real inflammatory stage has been established, the stage of hyperaemia.

Patient is fully awake and uncomfortable, pulse full and hard. The croupy child with high fever, dry hot skin, full pulse and uneasiness is usually promptly relieved.

Ferrum phos. Also in the hyperaemic stage. Acute febrile initiatory state of bronchitis; congestion of the lungs with oppression; cough is short and painful with irritation or tickling in the windpipe. Hard, dry cough with soreness of the lungs. It stands midway between *gelsemium* and *aconite* with less bounding pulse and restlessness than the latter, and less flowing pulse and drowsiness than the former. Its nearest analogue in chronic bronchitis is *phosphorus.*

Belladonna. Child cries when coughing; cough is barking, paroxysmal, usually worse towards evening. Throat affections that are red, shining, smarting, such as are seen in the first stages of tonsillitis and quinsy, no matter what the causative organism may be, occurring in individuals whose arteries and veins carry blood that is abundant in quantity and usually good in quality; rosy-cheeked, croupy children with sawing and whistling breathing; full, sharp pulse; in scarlet fever with throat symptoms as indicated; in acute meningeal troubles for the mental condition, delirium, "starting-up," the scream.

Gelsemium. Pulse is flowing rather than throbbing and is overfull. The congestion is more moderate, but the toxaemia manifested by weakness of muscles and mind is out of proportion to the severity of the assignable cause. Gelsemium complexion is described as being besotted. "Spring fever" symptoms, unaccountable laziness, should

have gelseniium.

Veratrum vir. Like aconite, great heat and dryness of the body, high temperature, full, hard, rapid pulse. Tendency to stupor; no anxiety or restlessness. (Mellon, of Chicago, has found it to raise the opsonic index in pneumonia just as baptesia raises it in typhoid according to Clarke, London). As soon as the arterial turbulence is over and the pulse becomes less hard and rapid the *veratrum viride* stage is passed.

Hyoscyamus. The cough of hyoscyamus is dry, worse at night, especially in recumbency; relieved on sitting up, with a tickling in the larynx or bronchi (Jahr). This is apparently the cough from vasomotor relaxation that we so often see. Then, of course, the mental and nervous symptoms make up the complex.

Kali bichrom. Cough that yields after more or less effort a glairy, tenacious mucus; a laryngitis, trachitis, or even an asthma may be accompanied by this—much hawking; in membranous croup with tenacious, sticky secretions hard to dislodge.

Bryonia. Dry cough, from "low down," with tickling and crawling in the epigastrium—an irritative cough—stitching pains often render thoracic breathing difficult.

Hinsdale covers the subject very fully and clearly, and his finesse in distinctions make his article a valuable one. It is too good to review in a short space and do justice to it.

Douglas Macfarlan.

Radium Therapy Technique. Although the varnish of a radium "applicator" (plate or rod) is sufficient screenage for the alpha ray, because of the possibility of minute cracks and of the eventual absorption of emanation by the varnish, protection by further screenage is necessary—screens of brass 0.2 to 1.2 mm. thick. The applicator with its screen is covered with a thin layer of rubber sheeting to protect it from exudations and moisture; fresh rubber obviates repeated cleaning. Screens are soon made radioactive by the beta rays and in turn will give off secondary rays, unless covered with rubber. The gamma rays (similar to the very penetrating x-ray) are not absorbed by the usual screens thus protected.

In reporting cases treated with radium it is important to note the kind and amount of screenage used and the number of milligram hours. This last is the hours of application times the amount of

radium *element* used—the amount of radium in the quantity of its salt used should be known.

In the esophagus he uses the gold tube on a pliable silver wire; in the nose and mouth the silver tube apparatus attached to a wire easily bent and fastened to the external surface with plaster. Your fingers may be protected with rubber finger cots or by handling the radium apparatus with (cover-glass) forceps.

When radium has been sutured to the tongue injection is advised of morphin and atropin to lessen secretion. With long application secretions may become radioactive and irritating. Reaction may appear exceptionally on the third day, usually from the seventh to the fourteenth, or not for seven weeks. If a lethargic condition follows prolonged exposure discontinue the applications until this has passed.

Before extensive application it is advised to prepare the patients as for operation; into hospital twenty-four hours at least for careful tests and examinations, which include blood pressure and blood analysis. Exposures are short at first until the patient's susceptibility has been ascertained.

Radium should be used after operation for even suspected malignancy as insurance against recurrence; it will do no harm if properly applied.

Radium is valuable in tubercular ulcer of the larynx.—M. W. McDuffie, M. D., A. W. Hoyt, M. D., and David Sackin, M. D., *The Chironian,* May. J. L. M.

Post-operative Insanity with Special Reference to Ophthalmic Cases. Adolph O. Pfingst. Practically all the late writers lay stress on the relationship of diseased bloodvessels (usually arteriosclerosis) and kidneys to psychic disturbance. The question is still unsettled whether this derangement can occur after an operation in an individual of perfectly sound mind or whether these patients are always mentally deficient beforehand, or at least predisposed to mental instability. Most cases may be classed under "acute confusional or hallucinatory insanity" and most of them recover, but forty to fifty per cent. of those showing mania or melancholia die or remain permanently deranged.

Cases kept in light rooms without bandages develop these mental conditions too, but less frequently than when kept in a dark room

with both eyes bandaged. Atropin is no longer blamed, for it has been found that the same psychic disturbances occurred when it was not used, yet undoubtedly the post-operative use of atropin is not an infrequent cause of delirium. Confinement and darkness are contributing causes, as are worry, alcohol, syphilis and predisposition.

Very rarely do post-operative psychoses follow any ophthalmic operation but cataract extraction. Even in the severest maniacal cases the operated eye is seldom injured. Accurate comparison cannot be made of the relative frequency of psychoses after eye operations versus general cases, but doubtless insanity occurs more frequently after ophthalmic surgery. It is impossible to get figures showing reliably the relative frequency of insanity in ophthalmic surgery.

Dr. Pfingst concludes (1) there is a pre-existing unstable nervous system, the operation being an exciting cause; (2) the cases nearly all occur in senile subjects, and the younger patients have "atheromatous" bloodvessels or diseased kidneys; (3) the most probable cause of the predisposition lies in the bloodvessels and possibly renal toxaemia—hence these cases are more properly senile or toxic (renal) insanities than post-operative or dark-room deliria; (4) all cases of mental aberation associated with hallucinations, etc., even though of short duration, may be considered true insanity; (5) psychoses may follow any operation, but are prone to follow operations upon the genitalia and eyes, more especially cataract operations; (6) insanity occurs perhaps once in every four hundred to six hundred cases of surgery, including ophthalmic surgery, and once in about every two hundred or three hundred (?) cataract extractions; (7) the ophthalmic psychoses do not differ materially from those after general surgery; and, (8) many are brief—two to four days—but some last months or years, or even become permanently insane; a small percentage die as a result of the nervous affection.—*Jour. Ophthal. and Oto-Laryngol.*, June. J. L. M.

Intranasal Drainage of the Lacrimal Sac. J. A. Pratt, of Aurora, Ill., cocainizes the eye, dilates both puncta and probes the canaliculus to the sac which is injected with ten per cent. cocain in epinephrin. Slit the (upper) canaliculus—if not already slit—and five millimeters of the upper part of the sac, to admit a No. 14 Theobald lacrimal probe. The cotton is removed from the nose and the clamp placed to protect the septum from the burr, which is now passed to the bottom of the

sac pointing to the opposite side of the chin with its shaft at 45 degrees. The hole, burred into the nasal cavity with gentle pressure, is enlarged up and down to be vertically 8 mm. and horizontally 6 mm. The burr should never be placed or removed when in motion. Any shreds in the nose are clipped with cutting forceps. The sac is washed out, clots removed and the cut in the sac closed with a superficial suture. Before closing examine the sac with a small curette and flush with forty per cent. argyrol. Unless there is infection the sac need not be washed until the wound in its upper part is healed, and then but a few times.

This method can be combined with the West operation: General anaesthesia. Cut (to the bone of the lacrimal fossa) just inside the lower lid from a little above the center of the internal canthus to a little past the lower punctum. Clean the fossa with Freer's sharp elevators. Burr into the nose an opening about the size of a No. 4 Theobald probe.

A strip of mucous membrane is now dissected from the lower fornix, from the temporal side to the internal canthus, but allowing it to be attached at that point. The wound is now sutured, a suture fastened to the end of the strip of mucous membrane. This strip is now passed into the nose through the hole previously made, and the suture anchored to the outside of the nose. A 19 mm. metal canula with an enlarged head (about the size of a No. 12 Theobald probe) should be passed through the oculo-nasal opening to keep that open and the mucous membrane strip in position until it grows into place. He uses a 3 mm. burr for the initial hole—one is apt to make that too small; he uses a 2 mm. bur when the sac is unusually small.

In cases where styles have been used it might be better to wear a short one through the new opening until the induration has subsided. Synechiae are less apt to form than in the West operation because the septum is protected, whereas in the West there is danger of abrasion of the septum by the instrumentation.—*Jour. Ophthal. and Oto-Laryngol.* (Chicago Ophthal. Soc.), June. J. L. M.

Stenosis of Larynx. *Long Island Medical Journal*, July. Laryngological Section, King's County Medical Society. A unique case, presented by Luther T. Jackman, of obstruction by a mass of "chronic inflammatory tissue" fibrous and dense, resulting from an intralaryngeal abscess of slow formation that ruptured down through the tissues

into the opening of a tracheotomy performed about five years ago for apnea from an abscess behind the trachea and above the site of tracheotomy. At that time artificial respiration following the tracheotomy was ineffectual but rapid dilatation of the sphincter ani immediately caused a long drawn inspiration, and respiration was quickly established with early return of consciousness. Schroetter's tube entered the esophagus—and through it a match was blown out with swallowed air. Radiograms and a catheter filled with Beck's paste revealed this condition, which was suspected because the Schroetter tube did not touch the tracheotomy tube. Von Pirquet and Wasserman negative. Thomas J. Harris advised persistent pressure with Schroetter tubes and against any general surgery. Hubert Arrowsmith thought this case admirably adapted to laryngostomy; that the tubes would be a waste of time. Also that with the tube of Koschier, of Vienna (as made by Mueller, of Chicago, with the speaker's modification), the man could go about his work as well as with the tracheotomy tube. "Perhaps after a time it might be a case for Roger's intubation tubes."

Suspension laryngoscopy was discussed and demonstrated by Wolff Freuedenthal, who advocates it strongly, with local or general anaesthesia. He has tried and abandoned the morphin-scopolamin dammerschlaf. In applying cocain, novocain and adrenalin be careful not to exhaust the patient before starting your real work; it is important to anaesthetize also in front of the tongue, and the tongue—he uses twenty per cent. cocain there and in the pharynx (posterior wall) after spraying the larynx and pharynx with five per cent. cocain solution. "You have to avoid gagging, coughing and all the reflexes as much as possible." He applies adrenalin after the cocainization.

Beware of edema after thorough curettage of the larynx.

Sometimes the picture under suspension laryngoscopy is entirely different from that seen by the indirect method.

Other instruments were mentioned—that of Rethi, of Budapest, examines the larynx indirectly, "distractio laryngis," with his "distractor," which has two prongs posteriorly and one anteriorly. It is inserted into the larynx, which is thus immobilized, the glottis opened ad maximum, the vocal cords are fixed, the epiglottis pressed forward, the anterior commissure can be seen with ease and it is not necessary to hold the tongue. Endolaryngeal operations are thus made very easy. In New York now there are three instruments for suspension laryngoscopy without suspension: Glogau's modification of

Struchen's can be inserted and opened wide with the patient prone; Unger's and Lynch's, and Mosher's, which is of use not only for suspension but for near-suspension.

Dr. Freudenthal nowadays sees a great number of cases of primary tuberculosis of the larynx without any involvement detectable in the lungs. J. L. M.

Gun Deafness. The concussion of an explosion close to the ear may rupture the membrane tympani, may injure the nerve endings of the ear and may cause irremediable deafness. As a rule one ear is more affected than the other. Expedience has shown the advisability of holding the mouth open. In the Russo-Japanese naval engagements one thousand seven hundred and ninety-one men were wounded; seven per cent. of those who survived—one hundred and sixteen cases—were concussion of the labyrinth, rupture and congestion of the m. t Ear plugs should be made of a substance (of the consistence of jeweler's wax) that remains ever plastic without hardening or softening and prevents infection.—Jobson Horne, *Lancet,* August 15, 1914.

J. L. M.

New Operation for Conical Cornea. Flavel B. Tiffany (*Ophthalmic Record*, August 1914) describes a new operation for keratoconus which not only checks the advance of the disease, but reduces the intra-ocular tension and flattens the conicity without any scar iridectomy or other disfigurement to the eye. The operation consists in trephining at the limbus, taking out a button of the cornea and sclera and then making a small peripheral iridotomy. If this does not suffice, removal of a small facet at the opposite of the limbus is advised; but in the second operation the author stops with removing the button of the cornea and sclera and no iridotomy is made. Should the case be pronounced, progressive and obstinate, Dr. Tiffany does not hesitate to advise making other facets at the limbus, all in line with the recti muscles. The iridotomy and removal of the facets are sure to arrest the disease and bring about the desired results in the way of reducing the tension and conicity and improving the vision. The several trephinings would insure the distribution of the cicatricial contractions, and there would be less likelihood of irregular astigmia following. The author feels that this operation promises more than any other for conical cornea. Besides it does not disfigure the eye, and there is little or no danger of any complications following it.—*Jour. of O. O. and L.,* June.

CORRESPONDENCE

A DEFINITION OF HOMOEOPATHY

To the Editor:

Dear Dr. Mackenzie: The May Journal of the Institute comes out with nineteen pages of bickering on the definition of homoeopathy, dull and exhausting in the extreme and destined to cause no end of trouble if kept up. To those that firmly believe in homoeopathy and consequently make it their practice it is unnecessary to paraphrase and compromise our fundamental law by the use of such a word as "method" or to infer that this great law is markedly limited. True, it may be limited, but only because of our own incapacity and deficiency. It is a universal law and more than a method; its scope stretches far beyond our own fields and, like all great laws, finds its correspondence in all sciences.

I think that the present difficulty has arisen from the idea that it is necessary for homoeopaths to make a compromise to so-called "local" treatments and extra-pharmacal measures; but this question seems too antiquated to be brought up again. In the years of the ardent homoeopath, homoeopathy was exclusive and all-sufficient; local treatment was tabooed because anything and everything could be done with homoeopathy. We have reached a saner period when we know that our science is limited by our own limitations. When we realize that homoeopathy is not a simply rule of thumb but a science requiring the nicest application of symptoms from drugs to symptoms of diseases we see the reason for our many failures and for much of our dependence on local treatment.

For myself, having graduated from an old-school university and having interested myself in a specialty that at present depends almost entirely upon local measures, it might be supposed that my tendencies would be favorable to this present movement. But they are decidedly not.

In talking to many of our own nose and throat men and even to many of the other school, I find that many deplore the ineffectiveness of our present ways and are looking toward something beyond the mechanical. We are even beginning to try out internal medication for "local" conditions. And these things are coming about among men further removed from the experience of internal medication than

the internist.

We at present depend much on local treatment, for as yet we have no better resources, but we are looking toward a "beyond" where we expect to see disease and diseased processes in a much more subtle form.

Why should we of the school that has for so long combated the materialism of medical science compliment our great truth by the statement that we merely conceive of it as a "method"? This word is not inclusive enough for our tastes and refers only to the carrying out of our great principle. What about the law itself that promotes our belief in this method?

There is, further an attempt to limit the application of homoeopathy, witnessed under the seventh heading of the committee's report "Hahnemann himself made homoeopathy specifically applicable to constitutional diseases." And, such weak-kneed lines as these, "Then homoeopathy as the curative method of medicinal therapeutics, can be applied perfectly to only such diseases as are curable. Whatever palliation results in imperfect application of homoeopathy in incurable diseases is incidental, not material to homoeopathy." It is most astounding to see within our own school such thoughts as are conveyed in every page of this report. All of this is couched in the nicest words, delivered with the kindliest spirit and coming from a committee of our representative men—men who apparently tell us that we are limited to "medicinally curable diseases." Do they mean our limits have been reached? Is there no incentive to go further? Are we hereafter interdicted from using anything but local measures on apparently local conditions? And this is homoeopathy!

In our own specialty we will confine ourselves strictly to our local treatments, plying the spray with unwonted eagerness; we will continue to cauterize vascular turbinates, to wash out ears, to politzerize and to touch up the nose; and with all this we will be happy in a benign content that "all is according to the code."

The spirit of the times bids us shun the backward step, and involuntarily we are antagonized by an effort to restrict the exercise or the study of a great law. We are told we have incurable diseases—we are not to go near them with our remedies, we are not to expect benefit. If benefit comes we are to overlook it. What prospect have we for the future?

We presume from the report that the host of local diseases are to be judged as purely local and should be treated as such with local measures. We will think the matter over and try it out on something like psoriasis. The whole matter is absurd and outside the conversation of educated medical men.

If there is need of recognizing the late advances in medical science why not do so? But there is no need or reason for compromising our own great principle. There is no conflict. We always have welcomed each new advance; we never have trouble in doing so, for truth never conflicts. It should please us to see the development of the science of pharmaco-dynamics taken up by the old school and developed into what is virtually crude provings. We should welcome the host of extra pharmacal measures, most of which can be applied upon our own principles. We welcome modern diagnostic precision and its methods. But do we consider that we are far better off with these recent additions than with a scientific law of cure, indifferent though we are to familiarizing ourselves with it and expanding it?

Methods of precision are exact, very apparent, demonstrable, easy to grasp and convincing. They appeal to us and we get as much from them as we can. Homoeopathy, too, must be exact if we but knew it well enough, for laws are immutable. Yet it is difficult to grasp, it is difficult to learn, but once you have it in hand and have had experience with its value there is a conviction that comes that cannot be shaken.

There is a need for faith in our great principle and such faith can only be built up by experience.

The days of endless argument are over; the academician lies prostrate with air hunger and the crowds are turning away from him to see the man who will show them how it is done. And they actually see it done, so it bothers them little how the academician explains it, whether it be by "curentur" or by "curantur," or whether he chooses one expression or another. Those of us most interested know what homoeopathy is, and the world at large does not misinterpret our principles. There has never appeared to be any awkwardness or difficulty in our position, and there is at present no effort by outsiders to twist and misshape our own words against us.

And so in the "name of universal peace," let what is "good enough alone."

Douglas Macfarlan.

SOCIETIES

ANNUAL MEETING OF THE AMERICAN MEDICAL EDITORS' ASSOCIATION

The annual meeting of this Association will be held at the McAlpin Hotel, New York City, on October 18th and 19th, under the presidency of H. Edwin Lewis, Editor of *American Medicine*. A most interesting literary program has been prepared upon important subjects of particular interest to every medical editor in this country.

Coming at a time when clinics and operative work are in full swing an unusual opportunity will be afforded those members who desire to observe clinical work, and for those interested in the business side a more propitious time and place could not be selected.

The annual banquet will be held at the McAlpin Hotel on the evening of October 19th. These delightful occasions of the American Medical Editors' Association are events long to be remembered, and the local committee assure us that this banquet on the evening of October 19th will exceed all previous efforts.

The annual meeting of the Southern Homoeopathic Medical Association will be held in Cincinnati, at Hotel Gibson, on November 9, 10 and 11. An excellent program has been prepared.

REVIEW

KEYNOTES OF THE HOMOEOPATHIC MATERIA MEDICA. By Adolph von Lippe. Edited by Donald Macfarlan, M. D., with an introduction by William B. Griggs, M. D. 163 pages. Philadelphia, Boericke & Tafel. 1915. Cloth, $1.00.

The preface by Dr. Macfarlan and the sketch of the life of von Lippe are both brief and to the point, as is also the consideration of the one hundred and twenty remedies by von Lippe himself. It is a handy little book to carry in the pocket and study at odd moments that might otherwise be spent idly. By so doing one could master the keynotes as presented by von Lippe in a relatively short space of time, and when mastered the possessor would have an asset of ready knowledge that would be useful daily in his practice.—J. O. O. and L.

NEWS ITEMS

Dr. McCleary is spending a well-earned vacation in St. Petersburg, Fla., with his mother.

Dr. Burton Haseltine has been touring in the East in his new Apperson car.

Dr. Gilbert Palen has returned to his office after taking a rest for a month. During his absence Dr. J. V. F. Clay looked after Dr. Palen's work.

Dr. J. Ivimey Dowling is at Bridghampton, L. I., where he will remain until September 20th.

A large eye, ear, nose and throat practice for sale in Philadelphia. Inquire of Dr. Frederic W. Messerve, Perry Building, Philadelphia.

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CONTENTS FOR OCTOBER, 1915

EDITORIALS

Page
The October Number 811
"Electro-Medicament" 811

ORIGINAL CONTRIBUTIONS

Principles of Electro-Therapeutics. By William H. Dieffenbach, M. D. 816
The Sinusoidal Current in Ocular Therapeutics. By W. Franklin Coleman, M. D. 823
The Treatment of Keratitis and Its Sequelae by the High Frequency Current. By W. E. Boynton, M. D. 829
Peroral Endoscopy. By Clinton C. Collier, M. D. 838
The Use of High Frequency Currents in Special Work. By E. H. Linnell, M. D. 847
High Frequency in Special Practice. By Wm. H. Smith, M. D. 850
Electric Magnet in Eye Work. By I. O. Denman, M. D. 854
Pneumomassage of the Eustachian Tube and Tympanum. By Alva Sowers, M. D. 856
The Galvanic Test as an Aid in the Differential Diagnosis of Inner Ear from VIII Nerve Affections. By G. W. Mackenzie, M. D. .. 858
Electrical Methods in Aural Inspection. By L. E. Hetrick, M. D. .. 860
Thermic Penetration. By Charles Eha, M. D. 862
The U-Shaped Electro Magnet. By George T. Fette, Ph. D. 864
My Experience with Electrotherapeutics in Ocular Diseases. By LeRoy Thompson, M. D. 867
The Electric Ophthalmoscope. By Dean W. Myers, M. D. 871
A Case of Laryngeal Papilloma Treated and Cured by the Roentgen Rays. By Drs. Isaac G. Shallcross and Weston D. Bayley. 873
Static Electricity in the Treatment of the Eye, Ear, Nose and Throat. By Arthur W. Yale, M. D. 877
A Large Calculus in Wharton's Duct. By Alice V. Mackenzie, M. D. 881
ABSTRACTS 884
SOCIETIES 890
BOOK REVIEWS 891
NEWS ITEMS 893

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EDITORIAL

THE OCTOBER NUMBER

The October number of the Journal is devoted almost exclusively to things electrical. It is practically a symposium on the use of electricity in the practice of our specialty. The contributions are from men of broad experience who have well earned reputations in the profession. Not one of the contributors is an exclusivist or a faddist, who sees virtue only in the application of electricity.

The associate editor, Dr. McCleary, has spared no effort to make this one of the best numbers of the year. We trust that the subscribers will read carefully the entire contents of this number and approve or disprove, as their own experience prompts them. We are all students seeking for the truth, no matter from what source it may come. There is so much that we do not know about the etiology and treatment of diseased conditions that it behooves us to search every accessible channel for information and accept it with welcome when found.

To him who makes a new discovery in medicine due credit should be granted; also to the critic who disproves an old, accepted but false tradition a like measure of credit should be accorded. The pages of this Journal are open alike to those who have claims to make for this or that therapy and to those who wish to criticise it, providing either is founded on an experience of sufficient amount to guarantee its worth.

"ELECTRO-MEDICAMENT."

The science of electricity has been developed to such a high degree that it is one of the greatest factors to be considered by the modern

physician.

When functional equilibrium of the organism is disturbed, nature automatically restores harmony, but in many cases at too great an expense to the delicate mechanism of the system.

The natural endowment of health preserving and restoring tendency depends upon the inherent properties of cells, tissues, and organs of the body. But under disturbed conditions such action is modified according to the severity thereof. Thus this profitable reaction may be delayed, deficient, deflected or excessive. It is at this point that the profession employs and demonstrates their masterful measures, to organize, control, direct and stimulate what recuperative reactions present as well as to suppress all antagonistic disturbances.

It is admitted that to secure measures to assist nature we are constantly using various therapeutic and surgical means to accomplish the task.

This surely should substantiate a plea for a better understanding of electro-therapeutics. Don't misunderstand me, drugs or surgical measures are not being decried. The homeopathic drug has a well earned place with the thinking mind and performs its duty accordingly. Likewise, surgical attention corrects abnormalities and re-establishes conditions that function may proceed without irritating interruption.

Electrotherapy is a potent factor in assisting the perfect balance of function maintained by the continuous adjustment of internal relations, one unto another. Experience of well known physicists proves that electro-therapeutic measures have a definite sphere of usefulness with drug action as well as giving assistance to surgery both before and after the operation.

Some one has stated that electricity is likely destined to supplant both surgery and treatment by drugs. On the other hand, my personal experience leads me to believe that electricity is rapidly becoming an almost indispensable auxiliary to treatment by drug and surgical measures, being a powerful factor in alleviating pain and soreness and in assisting and stimulating the recuperative powers; also to especially assist the proper drug in reaching its destination and causing its action to be more thorough. Thus, during the action of drugs, electricity is applicable not alone to the amelioration of neurotic states, but also to nearly all metabolic affections, establishing a method of

treatment in harmony with the rythmic alterations of natural laws.

Electricity, therefore, certainly merits as much consideration in our methods of treating disease as we have heretofore given drugs and surgery. The great good that is being performed with electricity throughout the country is astounding. From every point you meet physicians who are using one, two or three electro-therapeutic measures and who report the most satisfactory results. Probably the next physician utilizes three or four other successful electrical measures. The next man will still use others and perhaps the next fellow doesn't use it at all.

Electro-therapy is far too valuable an adjunct, in giving your patient all the scientific assistance that is possible, to ignore its potent powers. If physiology and diagnosis are admitted to be the direct supports of all therapy then electro-therapeutics must necessarily be included; it is just as essential to understand the parts involved in giving electrical treatments as it is to perform an operation.

The use of a good machine is essential; one that is capable of producing the character and amount of current desired. Then having in mind the object to be attained you can easily harness this potent factor accordingly.

In a recent article Dr. Wm. H. Dieffenbach states: "But a few years have elapsed since the atomic theory, upon which the splendid structure of modern chemistry was erected, stood unchallenged and unrivaled. Within the past decade, however, an entirely new conception of the composition of matter has been evolved, tested and found physically perfect, the theory of the electron. This theory does not displace the atomic theory, it merely amends it, and chemical science has not been marred, but improved and developed through this new hypothesis.

"An electron is conceived as a central positive particle, around which, as in the solar system, a mass of negative particles are held in attraction. When these negative particles become detached, or are freed through friction, induction, heat or chemical action and flow along a conductor, the manifestation of electricity is created.

"Electricity, therefore, has not been shown to be a stream or collection of freed electrons flowing along a conductor. When the electrons vibrate the ether, the various manifestations of physical force ranging

from Hertzian waves and wireless telegraphy to the short waves of the Roentgen ray and radium are created. The manifestations of heat and light are but various degrees of vibration of the ether of these electrons.

"The discovery of radio-activity, especially Madame Curie's work with radium, has fully demonstrated that smaller particles exist than the atom of hydrogen.

"We now know that the atom of hydrogen is a mass, being composed of one thousand electrons, and that it is this exact number of little maelstroms or vortices which furnishes the hydrogen individuality or property. We know that the carbon atom contains twelve thousand, the calcium atom forty thousand, the zinc atom sixty-five thousand, the iodin atom one hundred and twenty-seven thousand, and going upward to the higher atomic weights, that the radium atom has two hundred and twenty-five thousand electrons. We now know that many of the elements of high atomic weight are in a state of slow disintegration, their atoms giving off electrons with coincident manifestations of physical phenomena and transmuting into other elements.

"These statements would prove that the atom, as such, has lost its significance as the unit of matter, and also suggest the probability that carbon, graphite and diamond, although chemically composed of atoms of carbon, achieve their individuality through some special change of the electrons in the atomic structure of the carbon." (Jour. A. I. H., 1914.)

Thus it should be apparent that electrical phenomena are quite capable of exact computation, and, in turn, its classification is based upon the different rates of energy or forms of potential vibration developed. Fundamentally all forms of electricity are the same, but the effect of the current varies in accordance with the way it is produced. No matter how produced, electricity is electricity, showing the same qualities, but differing quantitatively, giving the various currents wherein the physicists may utilize them according to their electrical modality in producing a given action or physical result. This is based upon deductions made from scientific and accurate observations of electro-therapy by recognized electro-therapeutic societies.

Being proven and standardized by many eminent medical and surgical authorities of unimpeachable reputation; it therefore appears

almost absolutely necessary that we add this wonderful agency to our armamentarium. McC.

Two correspondents wrote to a country editor to know, respectively, "The best way of assisting twins through the teething period," and "How to rid an orchard of grasshoppers."

The editor answered both questions faithfully, but unfortunately got the names mixed, so that the fond father was thunderstruck by the following advice:

"If you are unfortunate enough to be plagued by these little pests the quickest means of settling them is to cover them with straw and set the straw on fire."

The man bothered with grasshoppers was equally amazed to read:

"The best method of treatment is to give them each a warm bath twice a day and rub their gums with boneset."—*Practical Druggist.*

PRINCIPLES OF ELECTRO THERAPEUTICS*

WILLIAM H. DIEFFENBACH, M. D.

New York City.

IN order to appreciate the principles of electro-therapeutics it will be necessary to review briefly the present conception of the composition of matter and the explanation of electricity as disclosed by the electron theory.

This theory, although of recent origin, has withstood the tests of all investigators and supplements the atomic theory and does not replace it.

The ultimate structure of matter is now conceived as the electron—a central positive corpuscle around which, like in the solar system, revolve negative electrons.

These electrons vary in number as they compose the atoms of different elements, and it is believed that the arrangement and numbers of these electrons in the atom give the latter its individuality. Thus hydrogen is estimated at 1,000 electrons per atom, carbon 12,000, chlorine 40,000, iodine 127,000 and radium 226,000 electrons per atom; the higher the atomic weight, the greater the relative numbers of electrons.

When through chemical action, heat, friction, induction and other physical forces the negative corpuscles or electrons are freed and flow along a conductor, such as copper or silver wire, we note the manifestation of the constant or galvanic current. The definition of an electric current can therefore be given as a "stream of electrons flowing along a conductor" and the manifestations of these electrons, whether flowing constantly or interruptedly or changed in quantity or vibration, can be studied in their relation to medicine.

I. *The constant or continuous current* still retains its old designation of galvanism among medical men, although in commercial use this term is obsolete. The action of this current upon tissues is electrolytic, thermic, mechanical, solvent and absorbing. Depending upon the number of electrons freed at each pole we have what custom has

*This article is written by request of the management of the Journal, and its scope must perforce be limited to a superficial consideration of this large and important branch of medicine.

designated as the negative pole (which is erroneously thus named, as the bulk of the electrons are at this terminal) and the positive pole, the impact of which upon tissues differs materially.

It is important for the physician to be able to determine these polarities of his apparatus in order to be certain of the correct marking of same and the electrolysis of water or litmus paper furnishes the simplest test. Both poles immersed in a glass of water the negative pole soon becomes covered with the liberated hydrogen bubbles and turns red litmus paper blue. Or a saturated solution of K. I. is treated as above and the brown iodine fumes are seen about the positive pole.

The action of the so-called negative and positive poles differs so materially that success in the use of the galvanic current depends largely upon the correct remembrance of these properties by the physician. It is customary to attach the green rheophore to the negative pole, the red cord to the positive pole. The parallel columns below will fix in the mind of the physician the relative action of the above polarities.

NEGATIVE POLE.	POSITIVE POLE.
I. Alkaline reaction.	I. Acid reaction.
II. Liberates hydrogen group.	II. Liberates oxygen group.
III. Softens and liquefies tissues.	III. Hardens and contracts tissues.
IV. Induces increased flow of blood.	IV. Diminishes the flow of blood and thus checks hemorrhage.
V. Through induced hyperemia acts as a true tonic and stimulant. If given in excess acts as an irritant.	V. Through depletion of tissues relieves pressure and pain and thus acts as a sedative.
VI. Leaves a white, soft scar.	VI. Leaves a hard, red scar.
VII. Non-metals, iodine, chlorine, sulphates, phosphates can be driven into tissues applied at this pole.	VII. Metals, mercury, iron, copper, zinc, radium can be driven into tissues applied at this pole.

Both poles produce electrolysis of tissue and both are used for ionization and phoresis, depending upon the polar affinity of the elements utilized.

If these points become clearly fixed in the mind of the operator a large variety of conditions occurring in general or special practice will at once come into therapeutic application by this current.

Thus in glancing over the negative column the use of this pole for softening and liquefying tissue indicates its use in strictures and contractions of all kinds. In cases of stenosis or stricture where scar tissue following treatment must be avoided, a weak current so as to produce gradual liquefaction without much local destruction must be advocated, 1-5 m. a. Over large areas where electrolysis is desired 15-80 m. a. can be applied. To secure the physiological action of iodine upon tissue directly where required, as in glandular hyperplasia, the negative pole is moistened with a saturated solution of K. I. and the iodine is driven into the tissue toward the positive pole, where its bactericidal and contracting effects are quickly apparent. Thus tubercular glands and certain forms of goitre respond to this technic. To secure the bactericidal and sclerolytic and relaxing effect of chlorine upon arthritic or ankylosed areas or joints a strong salt solution is impregnated on the negative electrode and the chlorine is driven into the tissues towards the positive pole. If the salicylates are required for direct introduction the same technic prevails. Through its ability to increase local blood supply the use of the negative pole is indicated in innumerable conditions where improvement of circulation or hyperemia is desired. In the domain of the specialties, such as ophthalmology and otology, this definite therapeutic power is but too often neglected. The tonic action of the negative pole is based upon its nutritional effects (cat-electrotonus) upon nerves, muscles and all cellular structures—it can produce hyperemia at will and with this acquisition all the therapeutic virtues of hyperemia can be utilized—nutritional and bactericidal. The positive pole due to depletion of tissues relieves congestion and pressure and thus frequently relieves pain. The contractile power of this pole can be utilized to check hemorrhages from small vessels, contract naevi or polypi or small angiomata. The positive pole can ionize and drive into tissues metals used in therapeutics: Mercury in luetic lesions, iron in anemia, zinc in ulcerative conditions, copper in infected areas, radium to act upon neoplasms, magnesium in neuritis and neuralgia. The electrolytic action of either pole can be utilized to destroy small growths, also superfluous hair; in the latter for cosmetic reasons the negative pole is preferred,

as it results in a white scar in contradistinction to the red scar of the positive pole.

The use of both poles for diagnostic purposes is a neglected field of great value. They are of undisputed value as tests for reaction of degeneration in many nerve lesions. Also this application in prognosis in legal tests and cases of malingering cannot be over-estimated.

The interrupted galvanic current applied over tissues with large electrodes for a long period produces marked catabolic changes and its use in obesity has been firmly established.

II. *The faradic or induced current* has but limited therapeutic uses at present, although its influence upon tissues cannot be denied.

It has no appreciable electrolytic action and its value depends upon the contraction and exercise it produces upon tissue. A coarse winding coil produces somewhat superficial effects, a fine winding coil a more penerating effect. By varying the winding of the coil in length and caliber, different degrees of contraction and penetration are secured.

It is utilized where tonic or stimulating action is desired upon muscle tissue—in atomic conditions—muscular imbalance, constipation. With slow interruptions faradism in mild dosage acts well upon the muscles of the eye, pharynx and larynx.

Very often a combination of galvanism and faradism is employed to accomplish these ends and the combination acts better than faradism alone.

III. *Sinusoidal Currents.*

The use of the sinusoidal current is also limited in scope as compared with the constant current.

A true sine wave when smoothly produced and capable of various speed regulations acts as an exerciser of muscle tissue particularly, and its value in general nutrition and muscular atonicity has been conceded.

The dosage is progressive and is regulated to the effect desired.

A short dosage of moderate wave produces marked nutritional and functional changes upon viscera, a long continued treatment produces relaxation and depression of vital function.

IV. *High Frequency Currents.*

The high frequency currents are at present much in vogue and their use dates from the classic experiments of Professor D'Arsonval

with sinusoidal currents with which he experimented in various rates of frequency, increasing same until no muscular contraction was elicited and no apparent sensory symptoms were noted.

A true high frequency current is one which has a minimum of 10,000 alternations per second and produces no apparent motor or sensory effects. Its action is chiefly upon trophic nerves and its effect upon nutrition and function of viscera is gaining much recognition. Thermic effects are produced through increasing alternations and through the concentration of the current by means of metal electrodes. The three main types of high frequency currents are the Tesla, D'Arsonval and Oudin.

The Tesla has a higher voltage and frequency than the D'Arsonval and its action differs from same. Locally its effects are more stinging and burning in character. The correct D'Arsonval current is obtained from an induced current with condensers, (Leyden jars or metal and mica) solenoid and spark-gap regulators. The Oudin is secured as a monopolar effect from the helix of the D'Arsonval apparatus.

The Oudin is utilized for its local effects chiefly by means of vacuum tubes. It causes marked hyperemia and bactericidal effects. *The indirect Oudin* has been advocated by the writer for the destruction of small growths. The technic consists in connecting the patient to the Oudin with a metal electrode and with a metallic electrode grounded approach the lesion to be treated with the point of the electrode until a discharge of sparks has covered the area. When the parts turn white contraction and sclerosis can be expected and small lesions like warts, moles and other facial blemishes are quickly contracted. If carbonization is desired heavy sparks and longer action must be applied.

The most popular application of the high frquency current is by means of the bipolar D'Arsonvalization or auto-condensation method.

This current causes marked catabolic changes, increased oxidation, enhanced nutrition and regulation of circulation. If properly applied there will be a glow all over the body with marked diaphoretic and urinary changes. Its successful use as an adjuvant in many lesions, including tuberculosis and diabetes, has been recognized. Experimental work by Dr. G. C. Dominick upon the digestive organs shows

that the D'Arsonval current has the ability to regulate the blood supply and function of viscera; cases of hypo- and hyperchlorhydria were in each instance changed to normal status.

Arterial tension can be favorably influenced by means of this current. It causes relaxation and general peripheral dilation and an increased elimination of toxines and waste products. Any one doubting the action of D'Arsonvalization upon metabolism is invited to test the urine before and after treatment of 500-800 m. a., given for thirty minutes. The changes in specific gravity and solids are remarkable, to say the least. The question of dosage of D'Arsonvalization is a matter of great importance. Treatments of very low amperage of but a few minutes duration produce little effect. Twenty to thirty minutes with 500-800 m. a. is requisite to produce appreciable changes. Treatments given for a much longer period and without intervals for reaction are depressing and if very great amperage is used destructive action can be secured. It is essential therefore to apply proper dosage and repetition of dosage in order to secure favorable results.

Monopolar high frequency treatments are usually given with the Tesla or Oudin attachments by means of vacuum tubes or metal cup effluéves.

The effect of this modality is to produce local hyperemia and erythema and it can be utilized also for its local bactericidal effect in certain skin lesions. The direct application of D'Arsonval currents by means of metal electrodes produces the so-called diathermic, derivation or thermo-penetration effects.

With this technic a high degree of dry heat can be liberated in tissues placed between the electrodes and results secured particularly in arthritis, neuritis and other intractable conditions.

Currents of 1000-1800 m. a. are utilized in this technic and care must be exercised to have the electrodes firmly and smoothly placed, for sparking is painful and causes necrosis of tissue.

The destructive action of the high frequency current is secured by means of pointed metal electrodes, and, depending on various refinements of technic, fulguration, incineration, desiccation, coagulation and carbonization of tissues can be secured.

The indirect Oudin application is recommended by the writer in cases where destruction and sclerosis of tissue is striven for. By

arranging the spark and time of application fibrosis, necrosis or carbonization can be secured at will.

V. *Static Electricity.*

This form of electricity has been driven from its former popularity by the more readily applied and new high frequency currents. It has, however, many points of value. It differs from the high frequency current in having a very high voltage with very small amperage and has an unidirectional flow. It produces general cell vibration of a pronounced character with slight ionization. The modality which has survived and has no analogue in other appliances is the so-called wave current. This is produced by connecting the insulated patient to the positive pole; the negative pole is grounded, and with closed spark-gap the discharging poles are slowly pulled apart until the requisite amount of current is secured.

The patient becomes a human Leyden jar and the charges and discharges constantly pass through his body, every cell receiving the diffusion and vibration of the current.

This wave effect exercises muscle tissue in a marked manner and the passage of the vibratory impulses have an excellent nutritive effect.

The local effect is particularly noted in the removal of congestion and edema through tissue drainage and the relaxing effect in cases of ankylosis.

The static brush discharge is also still utilized to some extent. Here the patient is connected to the negative pole, the positive pole is run to the earth and from another grounding the active electrode, preferably a well-moistened wooden stick, approaches the patient when a high potential discharge rich in ultra violet rays impinges upon the tissues nearest the point of the stick. Ozone with nitric and nitrous acid is generated at the zone of application and in ulcerative conditions a bactericidal and hyperemic effect is readily produced.

The DeKraft blue pencil discharge is an intensified brush discharge and is utilized as above.

This review is intended as a superficial summary of the present utilization of electricity in therapeutics. The use of the roentgen ray, radiant energy, light and heat, radium and other radio-active substances can be reserved for subsequent review.

256 West 57th Street.

THE SINUSOIDAL CURRENT IN OCULAR THERAPEUTICS

W. Franklin Coleman, M. D.,
Chicago.

TO devote one issue of an eye, ear and throat journal chiefly to electrotherapy is to create a new era in medical literature. Both drugs and electricity are accessible to the physician, but the use of either by the unskillful should make the judicious weep. Electrotherapy merits the serious study of the inexperienced or respectful silence rather than presumptuous criticism. It is my firm conviction that electricity cannot cure all diseases or any disease always. Experience also teaches me that this agent can relieve or cure many chronic diseases not amenable to drugs. Chronic diseases are emphasized because they afford the largest and most imperative field for electrical treatment. While the use of this remedy may be a very important adjunct to others in acute diseases, it is usually impossible to determine which has been most instrumental in securing relief, or whether nature has not been the most beneficent. In general medicine volumes have been written in the last decade on the high frequency current, apparently on account of its efficacy in benign and malignant growths, in malnutrition and in reducing high blood pressure. This latter action should be of paramount interest to oculists as the high tension of glaucoma, which in 15 per cent. of the cases accompanies high arterial tension, is sometimes reduced by general auto-condensation treatment only. Comparatively little has been written upon the use of the sinusoidal current. In 1883 J. H. Kellogg, of Battle Creek, described an apparatus he had devised that produced "some of the newer forms of the alternating current" which he used quite extensively. D'Arsonval, Paris, later named this current sinusoidal. Dr. F. H. Morse, of Boston, in February, 1896, drew attention to its special merits, and in January, 1914 (*J. Adv. Ther.*), he wrote a plea for its more extensive use. Dr. F. R. Granger, in 1914, wrote on the same subject. Dr. Morse said that in certain pathological conditions results obtained by it differ from what is possible by the static, galvanic, faradic or high frequency current.

Dr. DeKraft thinks it is one of those neglected modalities that deserve more extended use. Dr. E. R. Morton (London Hosp.) claims that in any case where faradic or galvanic currents are indicated, but cannot be tolerated, we have in the sinusoidal a current of greater value than is appreciated by the great majority of physicians. D'Arsonval has shown that the respiratory capacity of the blood is increased, the blood cells absorbing 20 per cent. more oxygen than usual, the circulation is accelerated and the urine shows an increase of organic changes by the use of the sinusoidal current. Since 1902 I have ventured, contrary to the authorities of that date, to teach that the sinusoidal current has an electrolytic or decomposing action. This opinion was formed by noting the decomposition of water or a solution of K. I. when the electrodes were placed in the water. Guilleminot in his handbook on Medical Electricity, 1906, states that Labatut demonstrated the penetration of the pilocarpine at both electrodes, which leads us to suppose that the sinusoidal current sets up ionic exchanges in the substance of the tissues comparable to those produced by the direct current. He adds that several physicists and physiologists have demonstrated the electrolytic action of this current. Since 1902 I have used this form of the alternating current more than any other modality in treating the eye and ear, and in optic nerve atrophy and chronic non-suppurative otitis media have used it almost exclusively. In optic atrophy I utilize it for these reasons: The special function of a nerve is determined by the stimulus to which it responds as does light perception to the stimulus of light upon the optic nerve tract. Also, we conclude if its function is expressed the agent which produces it must be a stimulant. In exposing the eye to the action of the x-ray, high frequency, static, faradic or galvanic current, also to vibratory massage, no light flash was produced. The interrupted galvanic gave a painful intermittent flash, while the rapid sinusoidal secured a constant mosaic light impression without the least discomfort.

The essential characteristics of the sinusoidal current. Both the faradic and the sinusoidal current will produce contraction of the voluntary muscles, but in the former the wave produced rises rapidly and drops more slowly to zero. This abrupt change gives rise to such discomfort as to make it ineffective in contracting the voluntary muscles and to prohibit any contraction of the involuntary. Neither does it stimulate a nerve of special sense. In contrast, the sinusoidal

machine delivers an alternating current of which the voltage curve is of the sinusoidal or simple harmonic type where rhythmic impulses take the place of abrupt rise and fall of the faradic wave, and are capable, when applied to the muscular system, of inducing painless contractions or tetanic spasms at the will of the operator and can also stimulate the nerve of common sensation and special sense. Further, the sinusoidal machine delivers a current which is made to gradually increase its strength from zero to maximum, then gradually to fall to zero, when the current is made to reverse its direction or polarity and again rise and fall as before. This completes one cycle or two alternations—hence an alternating current of this character affords us one of the best modalities for securing by slow alternations of ten to twelve per minute contraction of the voluntary muscles, and by 7,200 alternations per minute contractions of the involuntary muscles and stimulation of the nerves of special sense. Except my own reports I cannot find in a quite extensive search any allusion to the treatment of the eye or ear by the sinusoidal current. The direct current has been used extensively in optic nerve atrophy by many authorities, with the result of increased vision in 50 per cent. of the cases. This agrees with my own experience, while the A. C. has secured for me an improvement in 64 per cent. of my patients. The criticism is made even to the pleasing extent that the man is insane who would attempt to improve an optic atrophy by electrical stimulation. "The nerve is dead and that's the end of it." The falsity of the premises negatives the argument. If an eye has light perception there is not "death" or complete atrophy in any portion of the optic nerve tract; an equally forceful criticism is "a mistake in diagnosis." In many of my cases with phenomenal improvement the diagnosis has been confirmed by quite noted wits. If the A. C. fails to relieve an optic atrophy, the x-ray, vibratory massage or the high candle power lamp has not succeeded in my hands, although Coover, of Denver, has in some traumatic cases given relief with the x-ray. These may possibly have had exudates along the nerve tract. Cases due to trauma seem most amenable to treatment. A month's daily trial will usually determine success or failure, though occasionally it requires longer. In many instances in which vision has markedly improved, the appearance of the disc has changed little, if any. In the most unpromising conditions surprising results sometimes occur.

hence the patient, if there is form perception, should have a trial of treatment. In rare instances good vision has followed where there was only light perception.

In twenty-three cases of optic atrophy, chiefly primary, which I reported up to 1906, there was only light perception in five, of which 40 per cent. were improved; one to 20/67 of vision. In eighteen who had form perception 64 per cent. had vision increased from 60 to 1,500 per cent. In six the result was negative. Space will allow only a very meagre reference to cases, many of which have been published by me in full.

The following is a crucial instance of a patient with optic atrophy who had in one eye vision of 6/12 restored to 6/6—2 by the S. C. after other electrical modalities, drugs, etc., had failed:

Mrs. —— had secondary atrophy of the left eye from albuminuric retinitis of pregnancy. Under skillful treatment by a confrere for eighteen months with strychnia, K. I., the direct and faradic currents and vibratory massage, the vision of the left eye remained 6/12; that of the right eye increased from hand movements only to 1/70. By my advice the S. C. was used by another confrere. The vision of the left eye rose in six months to 6/7.50, later to 6/6—2 and that of the right eye to 1/30.

Optic nerve atrophy. Miss ——, aged 36, had been treated in an eye hospital for a year, six years before consulting me. Vision had not improved. The atrophy was most extreme with complete loss of color vision. The only hopeful sign was the extent of her field of vision, which was only moderately contracted. She was advised to return home, but insisted upon having treatment. With either eye fingers could be counted occasionally only at six inches. Four months' daily treatment with the S. C. enabled her to read and write her correspondence, when her new allegiance to Christian Science made her abjure all material remedies.

Dr. H., aged 59, has had optic atrophy for six years. Has for the past three months had hypodermic strychnia and taken K. I. without result. He is unable to see No. 200 close to his face. Vision in each eye rose to 12/200 and the fields improved under the use of the S. C., but he was obliged to return home. The doctor felt much encouraged and remarked that he could not see an elephant twenty feet from him in the park when he came, and in six weeks

could see the birds fly.

Double optic nerve atrophy probably of cerebral origin in a child of twelve. The right eye had only light vision, the left 20/30, with contracted fields. Following treatment for six months with the S. C. the vision of the right became 20/70 and of the left eye 20/20.

Optic atrophy at the age of 70 with vision of 20/200 in the left eye. Vision became 20/67 after treatment for four months with the S. C.

Optic nerve atrophy from nicotine poisoning. As the S. C. could produce no phosphenes the prognosis was very unfavorable and vision did not improve under the S. C. high c. p. lamp or x-ray.

Night Blindness. Dr. ——, aged 48, states that his sight had been failing since childhood and that he suffers from pain in his eyes. The vision in each eye is 1/4. He had the S. C. applied to the eyes twenty minutes daily for four weeks, when the vision of the right eye became 1/2, the left remained 1/4. The ocular pain disappeared.

Optic nerve atrophy and nystagmus in a babe of six months. The nystagmus disappeared after a short course of treatment with the S. C., then the family moved to another city.

Traumatic optic nerve atrophy. Mrs. P., aged 35, states she fell and injured her right eye four weeks ago. It has only 1/25 of vision. The outer third of the nervehead presents marked atrophy. There is dizziness and general headache. Under K. I. and the S. C. vision increased to 1/3. It is only conjectured in this case, as the treatment is mixed, that the S. C. may have contributed to the result.

Amblyopia exanopsia. J. T., aged 27, has had a divergent strabismus since childhood of the right eye which can now see the tips of the fingers, only, at six inches. The S. C. increased vision to seeing fingers at six feet and he was much pleased in being able to cross the street much more safely.

Nephritic retinitis of the right eye:

Congenital amblyopia of the left eye:

Mrs. ——, aged 50, gave a history of blurring of vision in the right eye during the last six weeks and of the left having been always useless, except as an accessory. V. R. E. without correction=6/150. Vision left eye=15/100 temporarily. The right fundus exhibits up and out large circular white exudates. The left shows no changes. A laboratory examination of the urine showed sp. gr. 1020, urea 1.8 and a faint trace of albumen. Treatment—The S. C. tri-weekly for

seven weeks, when each eye showed vision of 15/35 without correction.

Amblyopia accompanied by high refractive error. Formerly I was guilty of prescribing glasses without further treatment for these patients, as possibly some of my confreres still are. The S. C. had so uniformly improved vision that I highly recommended its trial.

P. A., 5 years of age, had in the right eye, with +300 s +2.75 c V=20/80: in the left with correction 20/80. The glasses were worn for eight months when V. R. E.=20/100, L.=20/50. Three and a half months' treatment with the S. C. increased the vision of each eye to 20/25.

M., seven years of age, had, with correction, vision of 20/50 in either eye. Following four weeks' application of the S. C. vision of each eye became 20/30.

D., aged 7, with correction of the right or left eye, had 6/15 of vision. After 15 seances with the S. C., R. or L. V.=6/7.

B., aged 10, with either eye reads 20/50—S. C., for three months. R.=20/30, L.=20/40.

N., aged 9, congenital amblyopia—R. E. V. with correction is 15/50+, L. E. V. with correction is 15/5+. Treatment—S. C. fifteen minutes daily from October 10, 1914, to December 19, 1914, when vision of each eye became normal.

Babe, aged 6 months. Congenital ptosis of right upper lid. After three months' treatment of the lid with the slow S. C. the lid was much improved.

While I have preferred the slow sinusoidal to any other current in the treatment of paralysis of the ocular muscles, the important factor in the recovery seems to have been the combination of another remedial agent. Without more ado a word to the wise suffices.

THE TREATMENT OF KERATITIS AND ITS SEQUELAE BY THE HIGH-FREQUENCY CURRENT*

W. E. Boynton, M. D.,
Chicago.

THE employment of the high-frequency current in the treatment of keratitis is not new but its value does not seem to be fully appreciated. Since it has proved itself a most valuable therapeutic agent in my hands I feel justified in bringing the matter again to your consideration.

First let us briefly review the therapeutic possibilities of the high-frequency current, and then with equal brevity the therapeutic indications in the treatment of keratitis; and having compared these analyses from a theoretical standpoint let us consider the results actually obtainable in practice.

The action of the high-frequency current is upon the ultimate cell, and its effect is largely one of increased metabolism. Analyzed a little more fully we find that the high-tension high-frequency current used with a vacuum tube gives us the following effects:

(a) Vasomotor stimulation, with increased capillary and lymphatic circulation.

(b) Cellular massage, with increased anabolism and catabolism.

(c) Increased osmosis, favoring both assimilation and elimination.

(d) Increased oxidization, both of the blood and within the tissues.

(e) Analgesia without marked depression.

(f) Inhibition, if not destruction, of microoganisms.

We have, then, through the action of the high-frequency current an increase in the activities which tend to combat disease and bring about a restoration of the normal.

Now let us consider the condition present in keratitis. We have here an affection intensely local in its importance, and constitutional or local in its causation; and presenting in varying proportion the following phenomena:

(a) Disturbed capillary and lymphatic circulation, with engorge-

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ment of the ciliary vessels and blocking of the lymph spaces of the cornea with liquid and cellular infiltrates.

(b) Necrosis and sloughing (in the ulcerative form) resulting from: The destructive effect of bacterial or autogenous toxins; disturbed metabolism due to impaired local or general nutrition.

(c) Imperfect resolution due—

To incomplete absorption of infiltrates or exudates; to incomplete restoration of exfoliated tissue; to cicatrization due to connective tissue proliferation or the organization of exudates.

To sum up, the picture of keratitis is essentially one of disturbed local circulation and metabolism, the pathognomonic pathology and sequelae being shaded by the high functional importance of the parts affected, while the predisposing and exciting causes usually include both local and general conditions.

The therapeutic indications in keratitis may be summed up briefly as follows:

(a) To discover, consider and combat the constitutional condition which acts as a predisposing or engendering cause.

(b) Locally—

To combat local existing causes; to remove the local disturbances which are at once symptoms and also maintaining and determining causes; to stimulate the local processes of restoration and repair.

To accomplish this end we strive—

(a) To lessen the virulence of the morbific agent.

(b) To raise the local and general resistance.

(c) To improve the local capillary and lymphatic circulation.

(d) To stimulate the proliferation of the fixed cells of the cornea, rather than the connective tissue elements.

(e) And, when the active stage has passed, to stimulate and hasten the slow process of replacing the scar tissue through proliferation of the fixed corneal cells.

The role played by the systemic factor in most cases of keratitis need not be emphasized to an audience of homoeopaths, while as oculists we realize how intensely local the affection is in the significance of its adverse possibilities. Our treatment, then, is general and local as to cause, and local and general as to effect.

As regards internal medication, we need here no more than reiterate that we are homœopaths and that as such we recognize, appreciate and consider the systemic phase of treatment and the value of the carefully selected homœopathic remedy.

There is unquestionably present a *systemic effect* in the employment of the high-frequency current even when used over as limited an area as in the treatment of keratitis, but it is with the local effect that we are now interested.

Furthermore, the *germicidal properties* of the high-frequency current are not to be held in too great esteem. When local antisepsis is desired we have other agents that will be found more effective and reliable.

It is the power of the high-tension high-frequency current to *raise the local resistance* and to *increase the reparative* process that interests us here.

We find that high-tension high-frequency acts directly upon capillary circulation, relieving the engorged ciliary loops and thereby clearing up the blood stasis which favors infiltration and impairs nutrition.

That, through its effects upon the lymphatics it favors the absorption of exudates, lessens chemosis when present and aids in clearing the blocked lymph spaces of the cornea.

That, through its oxidizing power, it hastens and augments the disintegration of the devitalized cells and organized exudates and infiltrates, while by increasing the osmotic action it expedites their removal; while its great influence upon metabolism tends to a rapid proliferation of the fixed cells of the cornea, making repair possible by a restoration of the normal tissue rather than by a cicatricial process.

When we add to this the sedative properties possessed by tubes of relative low vacuum we have an almost ideal local treatment, a most efficient adjuvant to the carefully selected remedy.

So much for theory. And my experience through the last five years has convinced me that the theory admits of very tangible proof. And, further, that failure to effect results may be due to faulty technique.

A differentiation must be made—

(a) Between sthenic and asthenic conditions.

(b) As to whether the corneal lesion is primary or secondary.

(c) And whether we are dealing with an active process or with

its sequelae.

In the sthenic forms, in acute exacerbations of chronic affections, and when the lesion is primarily corneal and the process active—

(a) A tube of relatively low vacuum will give the best results.

(b) A relatively weak current will be found best suited.

(c) Treatments should be of short duration and repeated at frequent intervals.

(d) And the lids be kept closed during treatment.

When the condition is asthenic, and after the acute stage is passed, and when the corneal lesion is secondary—

(a) A tube of higher vacuum is to be preferred.

(b) The strength of the current is increased to tolerance.

(c) The duration of the seance is lengthened, and the treatments given at less frequent intervals.

(d) The lids are closed or open, in accordance with the amount of stimulation desired.

When the active process has subsided and the condition is one of residual capacity—

(a) A tube of high vacuum is used.

(b) The current is increased to tolerance.

(c) The eyelids are kept open.

(d) The seance lengthened from seven to ten, or even fifteen minutes.

(e) The treatments repeated twice a week to begin with and the frequency being lessened as the improvement progresses.

Following this procedure results are but a matter of time. The time required may be surprisingly short in some cases, particularly in the acute conditions. It is apt, however, to be a relatively slow process, particularly when clearing up deeply seated opacities. The improvement is usually readily noted and continuous even after the frequency of the treatments has been much lessened. Pronounced improvement not infrequently occurs in the patient's general condition, as shown by a marked gain in weight and general sense of health.

In final, high-frequency is not a panacea. While it has a wonderful field of utility it has its limitations. Keratitis accompanying profound constitutional disorders, such as hereditary syphilis, active tuberculosis and other severe systemic intoxications, will resist local treatment just as the primary disease fails to yield to general treat-

ment. But in the great percentage of cases that come to the oculist in private practice, the high-tension high-frequency current will be found a most useful adjuvant to the carefully selected constitutional treatment.

In closing let me urge this one point:

No case of corneal blindness should be considered hopeless in which the cornea is not practically destroyed. Results as remarkable as they are gratifying can be obtained by careful and persistent treatment. The more dense and extensive the opacity the longer must be the course of treatment, but if even three or four years elapse before serviceable vision be secured, it is well worth the effort. Twenty-five per cent. of the world's blindness is corneal and unquestionably many of these unfortunates could be given serviceable vision through treatment with the high-tension high-frequency current. Of the lesser degrees of corneal opacity fully 90 per cent. will yield to such treatment.

Discussion

E. J. George: I agree with the idea that the high-frequency current acts both locally and systemically. It has been most serviceable to me. During a treatment the whole body is saturated with the current, so that a spark can be taken from the toe, the most distant part of the body, or any part. It increases metabolism and raises up a lowered nutrition. It is a great adjunct to treatment, for of course the patient must have internal remedies as well. The cornea is the most remote of the tissues from the centers of nutrition, being nourished by absorption without the entrance of blood vessels into it and hence it is the first to feel impaired nutrition. The leucodescent lamp is an excellent local treatment and it works well in conjunction with the high-frequency. It has been my custom to use the current before an operation for cataract to tone up the tissues.

G. N. Seidlitz: What is the length of time of each treatment?

W. M. Muncy: Some six years ago there was a child brought to me who had an unusually severe attack of chickenpox. It had affected the eyes badly. Both corneas were damaged. There were two large pock-marks in one eye, one over the center of the cornea, so that the vision was much affected. We started in with giving high-frequency treatments every other day. The treatment was persisted in for six months, when the improvement was great. There was then

20/30 vision in the worst eye. That result made me very enthusiastic about the value of the high-currency treatments. In following it up in other cases I found that the difficulty was to keep the patient encouraged and interested enough to keep up the treatments long enough to get all the benefit there was in them. The treatments had to be frequent and the patient could not see that rapid improvement which is necessary to keep them enthused. That is one argument against the treatment itself; it is effective only when kept up for a sufficiently long time and it is difficult to keep the patient coming. I feel that it is the best method there is to get rid of opacities of the cornea from any source.

The difficulty spoken of induced me to try dionin; otherwise I would have kept on with the high-frequency in every case. It results about the same as the high-frequency current. It must be used every night in a solution of sufficient strength to cause a slight irritation or congestion. This reaction—a slightly increased redness about the corneo-scleral junction—is necessary to get the benefit we are looking for. Hence we have to increase the strength of the solution from time to time.

It is really remarkable how pretty serious opacities will clear up under this treatment. Not only must the solution be increased in strength as you go along, but also it must be freshly made as it deteriorates by keeping. The fact that the dionin solution was easier of application, took less of the patient's time, was less expensive and therefore more apt to be continued, led me to make the change from the electric to the dionin treatment.

J. A. Campbell: I have not used the high-frequency current for this purpose, but I have used the dionin solution. I am in harmony with Dr. George about the systemic effect of the current. I have used it in sixteen cases of exophthalmic goitre and found that it benefits the general health by some toning up process. In one case I remember that the pulse was 120, the body weight 104; under this treatment the goitre diminished in size, the pulse went down to 88 and the weight went up to 124. It shows the general improvement of the nutrition under high frequency; wherever you apply it, it still promotes the health of the whole system. I would be a little hesitant to use it on the eye, but I know that Dr. Denman does it.

W. M. Muncy: In glaucoma especially I have found the high-

frequency very effective. I had two patients with mild forms of glaucoma in which the effect was so striking that I wondered whether there was not some psychic results in the improvement. At least I thought that at first. Both had a great dread of light and I have found that symptom a good indication for the current. It should be used, say, once a week. Soon after the photophobia and sensitiveness to light disappear and the patient feels encouraged and generally better. During my vacations I have gone away leaving the patients medicine to take in the hope that I could get away from the use of the high-frequency current, but it did not work. It is certainly one thing that will relieve the photophobia that sometimes occurs in glaucoma.

J. R. McCleary: I have been working with the electric current for a number of years and am deeply impressed with the excellence of the results. In the paper I am pleased with the scientific side of the subject which Dr. Boynton presents. I can verify the good results time and time again. With improved general metabolism we have a better result in local conditions. As homoeopathic specialists we have learned the importance of working upon local conditions through and by means of the general system, for that is what the internal remedy does. In high-frequency and low tension we have discovered something that will do the same work and does its work in the same manner. There are many more good things to be said about this method of treatment. The testimony of its benefits come from so many men in so many different cities and localities that there can now be no doubt about it, therefore it is a good thing to come together and compare results.

I am glad to hear what Dr. Boynton said and of the other cases reported in the discussion. Dr. Goerge spoke of its effect upon nutrition and of its usefulness in cataractous conditions before operation. Dr. Muncy spoke of its use in glaucoma. Like the homoeopathic remedy, it cures a number of conditions and diseases if the symptoms correspond. I think that the high-frequency properly used is a natural adjunct to the homoeopathic remedy for a number of conditions and diseases. More so than any other method at our disposal. This is a subject that I would like to see brought up every year until we have all mastered its principles and get the greatest benefit out of it. It would be a good thing to have a bureau of electric work in our

specialties. In the October number of our Journal we are going to devote the whole issue to the work of the high-frequency in this field. I have asked permission of Dr. Mackenzie to put this paper in I would like to ask what form of current was used, the multipolar or the monopolar?

A. A. Eikenberry: I have had some experience along this line of stimulating corneal ulcerations in the way of homoeopathic prescribing. I was studying the action of causticum upon the nutrition of the eye. I was led to use it locally, so I diluted the second decimal and used it by instilling it into the eye and by that method I have seen very dense opacities clear up astonishingly. One case, in which the opacity was white and so dense as to cause blindness, cleared up and became transparent under the optical application of causticum. In another case that had had corneal ulcers when a child—now fifty years old—and could not see enough to read, opacities cleared up marvelously by this treatment. I thought it proper to mention it at this time.

G. D. Arndt: My experience corresponds with the representations made in the paper. I wish to emphasize the importance of selecting appropriate vacuum tubes for the various degrees and stages of inflammation. It should be a low vacuum tube in acute inflammations and high in chronic. My best results have been obtained by applying the tube in direct contact with the corneal tissues. My success has been of such a character that I now feel great comfort in approaching this kind of a case.

E. J. George: When applied in that way, does it not stick to the cornea?

G. D. Arndt: No, no, not at all.

E. J. George: Do you cocainize the cornea?

G. D. Arndt: No, I put the tube in contact with the cornea, under the lids; that is, I pull the lids down over the tube. I have thin, flat tubes with a slight curve to fit the ball of the eye better. I slip it in against the cornea under the lids. It does not stick.

W. E. Boynton: I stated in my paper that I approved of the use of the internal homoeopathic remedy. I have tried with and without and got the best results with. Dionin is a new thing to me, as is the application of causticum locally. I am going to try them both. I acknowledge that the time required to clear up a leucoma is a discouraging element in the treatment; it is difficult to keep the patient

interested long enough to effect a cure, or at least final results. At first I start in with daily treatments, later every other day, and arrange for two months' treatment. In chronic cases I tell them beforehand that from seven to fifteen months will be necessary to effect the best results possible. In chronic cases I repeat the treatments three times a week and less frequently as it improves.

J. A. Campbell: Do you use contact with the naked eye?

W. C. Boynton: In acute cases I use contact through the closed lids, in chronic cases contact with the naked cornea with opened lids. I have never had the tube stick nor seen any irritation from it. I mean other than the temporary redness, which lasts only a few minutes after the treatment. The hard tube has given me the best results. I use the Tesla crown, multipolar. I have never used the bipolar. The amount of current employed is slight; the degree of excitation is a sufficient measure of the amount of current to use. About one-eighth inch with low tension (excitation). With high excitation (?) about one-half to three-fourths inch. The size depends upon how limited a space you are treating. Where the patient's vitality is low I also apply electricity along the spine, through the clothes, and for a few minutes only.

PERORAL ENDOSCOPY*

Clinton C. Collier, M. D.,
Chicago.

By peroral endoscopy we mean all direct examinations of larynx, trachea, bronchi, esophagus and stomach. To carry out this line of work one must have an assortment of expensive instruments, and, after obtaining these he must obtain instruction, then material, so as to develop skill.

Since taking up this special work in my specialty I can readily see how useless it is for one to undertake to master it unless you have a clinic, or are in touch with one. The material is too scarce, and one would have to wait many days, weeks or months to get together any number of cases, and although you can learn on a manikin, cadaver or dog, it is not on a live human being, and when called to a case it is a very different thing. That this line of work is receiving more and more attention each year since 1807, when Bozini first examined the upper end of the esophagus, is shown by the rapid strides in perfecting instruments and technique not only for examining but successfully operating by the direct method, and today we have several men whose skill in this work is known from one end of the world to the other. What is to be gained by direct examination?

First. The lower part of the trachea, the bronchi, the esophagus and stomach can be examined as never before. Second. That with the tubes we have a direct view, and not an inverted image as with the mirror; we have the patient under better control, and can tell what we are seeing and taking away. For an ordinary laryngoscopic examination the indirect or mirror method does fairly well, but when a thorough examination is desired of a pathological condition, existing within the larynx or trachea, the direct method is the more exact. *Skill* must be acquired and this can be obtained in three ways. First, by the use of Killian's manikin; second, a cadaver, and third, on the dog. The dog I consider the best and comes next to the human being; but, as previously stated, after you have obtained a working

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basis by the above methods it requires still greater skill when you go to work on a live human. You should adapt yourself to the use of all of the different instruments, for there seems to be a place for them all. There are the Killian, Jackson, Ingals and Johnson, as well



Introduction of Esophagoscope

as the Kahler-Reiner panelectroscope. There are many foreign makes,

which we Americans know less about, such as Mikuliep's, Rosenkein's, Von Hacker's, Starck's and others. Personally, for an all-around instrument, I prefer Bruening's. The passing of the tube constitutes a small part of the procedure.



Esophagoscope introduced and in place, ready for the extension tube.

It is the handling of the forceps, the locating and grasping of

the foreign body or the cutting out of a growth that is the most difficult part of the operation. We have the choice of doing this work either in the sitting posture or the dorsal decubitus. Personally, I have found that it is hard to tell just which position to use, and



Direct Laryngoscopy, Local Anaesthetic, using Lynah's speculum.

the patients must be taken into consideration as to whether they have

a short, thick neck, or a long one, whether they are nervous or susceptible to the influence of the local anaesthetic. Some patients are examined in the sitting posture under a local without any trouble to the operator, or ill feeling to the patient; in others it is out of the question, and even under a general anaesthetic it is very difficult. For examinations under local anaesthesia in persons who are not nervous and frightened, I first apply thoroughly to the mouth and throat a 5 per cent. solution of cocain. This I do by Sajous' forceps, which catches the cotton and can be locked, so the cotton cannot come off. After a couple of applications of 5 per cent. cocain I then use two applications of a 10 per cent. solution, which I follow by an application of a small quantity of 20 per cent. solution. This procedure takes twenty to thirty minutes. At the end of that time the patient is ready to work on. If I have a very nervous patient and one that is easily alarmed, I give bromides for a day or two, and have them well under its influence, and about forty-five minutes before the examination I have given a hypo of morphin, 1/8 or 1/4, and atropin 1/150. If it is possible to make the examination without the bromides and morphia, I certainly would advise doing so. Of course the use of bromides and morphia does not do away with use of cocain, a small quantity must be used, even when a general anaesthetic is given. For a general anaesthetic, ether is given in the ordinary manner, of course preceded by morphin 1/8 to 1/4, and atropin 1/150 grain.

During the introduction of the laryngoscope in the sitting posture the patient is placed on a low stool, or, better still, a Bruening's chair This chair is so constructed that the patient is forced to sit with the chest outward and head and neck extended and tilted back. The head should be slightly turned to right or left, as wished by the operator. The scope is then passed into the mouth between the bicuspids, not over the centrals, as I have seen so many times, and found that the operator had loosened the teeth, scratched or bent the tube. If the upper centrals are out the medium line is the one of selection. Pass the tube over the bicuspids, backward over the base of the tongue till the epiglottis comes into view, then behind it, when slight pressure upward on the handle will bring the larynx into view. Now, if the anterior commissure is not seen, the assistant is told to push the head forward until straight position is assumed

and then all parts of the larynx are seen easily. It does not require much force to bring the larynx into view. In examining the trachea or bronchi, the most difficult part of the procedure is to pass the tube between the vocal cords. When once below the cords little skill is



Esophagoscopy, Local Anaesthetic. Sitting posture, Bruenning's chair. Scope in Esophagus and extension tube being passed.

required in passing the tube into the trachea or bronchi. If you are

using a Mosher, Johnson or Jackson speculum, the anterior commissure and cords are brought into view, as above described, and then the tube is entered through the speculum and passed between cords into trachea. With the Kahler or Bruening, instead of the laryngoscope spatulum, a tracheal tube is placed in the handle and the entrance made into the larynx, as with the spatula. After entering the commissure and approaching the cords the flat end of the tube is turned so as to engage the cords and with a turn and a downward push you enter the trachea, and the minute you enter the trachea you will get a tracheal cough, which is the signal that you are in the right place. You get this cough even under a general anaesthetic. After entering it is easy enough to put in your extension bronchial tube and pass it into the bronchi. If the Killian or Jackson tubes are used for bronchoscopy one of numerous spatulas, such as Jackson's, Ingal's, Mosher's or Johnson's will bring the larynx into view. The tube is then passed between the cords and the spatula is removed leaving the tube in place. The writer prefers a new instrument, the Lynah speculum. This instrument has a double light and two sized blades and can be adjusted for all patients. Can also be used for direct intubation, although personally I have not used it on the human, but if it works as nicely on a human as on a dog, it will be easier to intubate and much easier to extubate, for you have the field directly before your view.

There are some cases, especially in the young, in which foreign bodies cannot be extracted by upper bronchoscopy, and then lower bronchoscopy must be resorted to. The ordinary tracheotomy is performed and the tube passed through the tracheal opening. We now come to suspension laryngoscopy, which is excellent for operative work, but not so good for diagnostic work as the ordinary laryngoscopy. The idea was promulgated by Gustave Killian some three years ago. The principle of the procedure gives the operator both hands to work with and does away with an assistant holding the head. The weight of the patient's head rests on the speculum and this in turn is hooked over an adjustable arm, fastened to the table. The arm can be raised and lowered as needed, as well as brought forward or pushed backward. Mosher, of Boston, has a device to which he hooks his speculum and uses it for suspension. The Lynah speculum is also equipped with hook for suspension work, but so

far I have not used it in that way.

32 North State Street.



Introducing Bruening's Spatula for Direct Laryngoscopy. General Anaesthetic.



Introduction of Jackson tube into bronchi, using the Lynah speculum to introduce tube through. General Anaesthetic.

Discussion

W. H. Phillips: In what conditions of the trachea or bronchial tubes is this procedure of service except when foreign bodies are present? I have read that some cases of asthma could be reached in this way that could not be reached by any other method. Has the doctor had any experience in that line?

C. C. Collier: I have not used it in asthmatic cases. I have used it, however, in syphilitic ulcers of the esophagus for making a direct application to the surface of the ulcers. I have also used it in tuberculous ulcers of the larynx and adjacent parts. In such cases I have been gratified by the results obtained. I have also used it for diagnostic purposes and in one case removed a small portion of a growth for examination to see whether it was malignant or not.

N. I. Bentley: I have found it of advantage to have two tubes. The doctor claims that he has gotten shocks during the operation and I have been shocked in the same manner. It is better and safeguards one to have two tubes. I had a peculiar case in which the x-ray picture showed a closed safety-pin with great distinctness. It was located in the esophagus. I went into the esophagus and took out a piece of bone—a bone washer about that large round (holding up fingers), say one-half inch in diameter, together with several big wads of paper, but no safety-pin. Another picture showed nothing, so that it must have been the appearance of a safety-pin only. These foreign bodies were so arranged as to make a splendid representation of a safety-pin. I have used this method in stricture. I have also had a supposed case of foreign body and worked to get it out without success and then had it x-rayed and there was nothing there.

THE USE OF HIGH FREQUENCY CURRENTS IN SPECIAL WORK

E. H. Linnell, M. D.,
Norwich, Conn.

I HAVE been asked to give my experience with the high-frequency currents in special work.

I use the various forms of the current with more or less satisfaction but less frequently than formerly since I have been employing the intermittent x-ray, as I prefer the latter in certain conditions. Still the high-frequency continues to be a valuable asset in my equipment, and in some cases accomplishes what no other method of treatment in my experience will.

The different modes of application of the treatment which I employ consist of vacuum tubes of varying degrees of vacuum, and of various shapes, and electrodes for administering the fulguration spark.

Autocondensation is also valuable for improving the general circulation and metabolism, and thus indirectly influencing eye, ear and throat conditions. My apparatus is of a rather old type, but answers my purpose very well. It consists of a D'Arsonval solenoid and Oudin resonator, energized by a twelve-inch coil and Leyden jar condensers.

On the eye the vacuum tubes may be used advantageously in interstitial keratitis to hasten absorption of the exudate and for clearing recent nebulæ. They are also useful in sluggish ulcerative conditions of the cornea. A very mild current only should be used with a low vacuum electrode and for a short time only—not more than one or two minutes. The tube is applied over the closed lids.

The treatment is also beneficial in affections of the lids and conjunctiva when a mild stimulating effect is desired, as in marginal blepharitis, induration of the lid border following hordeola or chalaza, etc. The current has but slight penetration, and therefore is not appropriate for intraocular affections.

In the nose, a thin flat electrode of low vacuum is useful in reducing turbinal hyperplasia. In one case of syphilitic ulceration it was of service in lessening the discharge, healing the ulcerations and mod-

erating the offensive odor. The application is stimulating, astringent and disinfectant.

In lupus and warty growths the fulguration spark is valuable.

I have sometimes used the latter modality with gratifying results in chronic follicular tonsillitis and hypertrophy. I have now under treatment a lady, and she shows decided improvement after three treatments. After thoroughly cleansing the crypts and cocainizing them, my technique is as follows: I use a small tubular glass electrode with a small platinum wire projecting about one-sixteenth of an inch from the extremity. This is connected by means of an insulated handle with the terminal of the D'Arsonval solenoid. The point of the electrode is introduced to the bottom of the crypt before the circuit is closed. Then the switch is closed by an assistant or by the foot of the operator. The point of the electrode is then raised a fraction of an inch until the spark is produced. The sparking is continued for a few seconds until the surface of the crypt becomes white, when the current is turned off. If the precaution is not taken to introduce the electrode with the circuit open more pain is experienced and the patient is apt to be restless, with the result that it is difficult to limit the area of cauterization as desired. Several crypts may be thus treated at one sitting and the ensuing scar effectually closes the crypt, and considerable shrinking of the tonsil results. If only a weak current is used the reaction is slight and the patient rarely complains of much pain or soreness following the treatment. A gargle of a hot solution of glycothymoline is grateful. In sensitive individuals the spark from the Oudin current, which is much milder, may be employed. A hypertrophied tonsil may be much reduced in this manner, whether the follicles are diseased or not, and ablation or enucleation may be thus avoided. When the tonsils are diseased, possibly tuberculous, without hypertrophy, this is a very satisfactory procedure. They may often be restored to a healthy condition without operative measures.

I have had success in several cases of cystic goitre with the high-frequency current. In these cases I first apply iodine or iodo-vasogen to the surface, and then use a rather high vacuum tube until the iodine is mostly absorbed. I have usually employed the resonator current in these cases, but perhaps the D'Arsonval would act more rapidly if the patient is able to endure the rather sharper burning sensation. It

is often desirable to raise the electrode slightly, thus getting a mild sparking effect. In long standing cases or those which do not readily yield to treatment, try the condenser tube, which has incorporated in it a platinum disc similar to the target of an x-ray tube.

In ear affections the high-frequency current affords another form of treatment to employ in those disappointing cases of chronic catarrhal otitis media, especially with tinnitus. Special cone-shaped electrodes are used with a very weak Oudin current for not more than one minute. The electrode is introduced deeply into the meatus, but not in contact with the drum membrane. There should be no pain. If a low vacuum tube does not relieve the tinnitus, try a higher vacuum with a light green illumination. Low vacuums have a sedative and high vacuums a stimulating effect. Too strong a current may burn the skin. This treatment is also occasionally beneficial in nervous deafness and also in chronic otorrhoea. It is disinfecting and drying, and thus arrests the discharge and hastens resolution.

Eczema of the auricle is helped by the resonator current.

Once or twice a week is my rule for treating ear cases, as also other conditions mentioned. The intervals may, of course, be varied according to the judgment of the operator, being influenced by results attained, etc.

My experience with the high-frequency current in special work has not been extensive and other treatment has usually been employed simultaneously, so that it has not seemed worth while to report cases.

This short paper is only meant to be suggestive. The treatment outlined is worthy of a trial and in some cases will yield gratifying results.

HIGH FREQUENCY IN SPECIAL PRACTICE

Wm. H. Smith, M. D.,
Cincinnati, Ohio.

IT is with no small degree of hesitancy that one extols the virtues of a therapeutic measure other than surgical. We use a given plan of treatment involving the use of certain medical or physical therapy and the patient recovers. So does the other man's patient. Many of the ills that we are called upon to treat are self-limited and even religious exhortations will cure, if one may use the word. On the other hand, many do not recover in spite of our various therapeutic measures. It is just such facts that have driven the man with little patience or observation to therapeutic nihilism.

I have used the high-frequency current as a therapeutic adjunct almost constantly for six years and am convinced that it deserves a prominent place in the physician's and physician specialist's armamentarium. By high-frequency current I mean the electrical current derived from an induction coil used in connection with a current interrupter or a transformer. In our office sometimes the Tesla current is used, but more often the D'Arsonval, and unless otherwise specified in this paper it is the latter current that is referred to. We usually administer it by means of a medium vacuum tube.

As to the method of its action, I believe that its value is dependent upon the fact that it is another application of the principles of what is known as the Bier treatment, namely, passive hyperemia.

In painful conditions of the eye, as in asthenopia, when correction of the error of refraction and of the muscular imbalance does not relieve, in keratitis, iritis and glaucoma the frequent application of high-frequency (as we shall call it) is very grateful to the patient and promptly brings relief of the pain. In corneal ulcer it limits the inflammation and pain in the early stages and has a decided influence in hastening granulation and healing. In the treatment of the interstitial form of keratitis it is especially valuable, shortening the inflammatory stage and reducing the resulting scar to a minimum.

E. G., aet. 15 years, interstitial keratitis, O. S. The child's parents

being Christian Scientists the trouble was permitted to run for three weeks before a physician was consulted. On July 28, 1914, the patient was brought to my office with the vision in the affected eye—to fingers at five feet. Nearly the whole cornea was involved, but the process was most intense over the lower segment. Atropin and dionin were prescribed, mercury administered internally and frequent applications of high-frequency made. At first a mild current was applied on alternate days. As the condition improved stronger current was given less often. The intense photophobia and the pain were relieved in a very few days. The patient was last seen on November 10th, at which time the scar could be seen only by carefully searching with the aid of oblique illumination and the vision was 20/30+.

The pain in iritis is rapidly relieved—in fact, each treatment affords so much relief that the patient is very willing to return for another application the next day. It would be useless to describe any of the many cases of this affection treated. Of course other treatment directed against the causative factors is always used, but the rapid subsidence of the active symptoms is credited to the use of high-frequency. Speaking of causative factors, our experience has led us practically to drop rheumatism and gout from the etiology of iritis. We are inclined to attribute most cases to infections about the head, as for example the tonsils, the teeth (as in Riggs' disease) and the accessory sinuses. Occasionally, it is true, the source of the trouble is located in other parts of the body. Of course the ever prevalent syphilis as a causative factor is to be remembered. Some cases were one or two weeks old when first seen, but the patients were soon rendered so comfortable that they could be kept under observation only with difficulty. In no case did hypopyon or cyclitis develop.

High-frequency is of a special value in conditions requiring improvement in the circulation; it stimulates the absorption of pathological products and improves the nourishment of the tissues. In retinitis hemorrhagica, for example, it hastens absorption of the opacities of the vitreous and favors re-establishment of the retinal circulation.

M. A., aet. 35 years, retinal hemorrhages due to thrombosis. Patient has a specific history dating back some six or seven years. The first month, during which time the patient had been taking K. I., there was very little change in her condition. When she came to

us she had a vision of 20/200. At the end of the first month of treatment with high-frequency and merc. cor. her vision with +.75 D. S.=20/70. The treatments were given every other day with a medium tube and mild current. At the end of the second month of the same treatment, excepting that the intervals of treatment were lengthened, vision=20/30 without a glass. The vitreous was clear, the condition of the retinal vessels much improved and the visual coloboma was much decreased in size.

It is with considerable diffidence in these days that any claim is made as to the value of a therapeutic measure in cataract and one is laying himself open to severe criticism in doing so, but I am led to firmly believe that in the early stage much can be done in this affection towards delaying its development and maintaining thereby a good visual acuity for a longer period. In my work with Dr. J. R. McCleary I have seen many cases of this kind treated by the use of the current and am convinced that much good was accomplished in some. One case I will mention: A minister with a low degree of myopia. When first seen the patient had a slight haziness of the lens O. D. and well marked in O. S. He has been treated more or less regularly once a week with medium tube and lots of current. At present writing the haziness has apparently disappeared in O. D. and that in O. S. has remained so nearly stationary that only a slight increase has been made in the strength of his lens in over two and a half years, giving him an acuity of 20/20 in the affected eye. I realize that in many cases the cataracts are very slow in maturing, yet previous to the use of high-frequency in this case it was rapid enough for the patient to detect.

I will not attempt to explain the action of the high-frequency current in these cases, excepting to call attention to the fact that we know by its effect upon the circulation it aids metabolism, that is, it increases elimination and improves the nourishment of the tissues.

Nothing that I know of will give more relief from the pain of acute sinusitis than large doses of high-frequency applied over the painful area and the same can be said of threatening mastoid.

In order to keep this paper within the space limit I will conclude by saying, wherever there is pain due to congestion or inflammation, where absorption and elimination are to be promoted or faulty circulation to be re-established, high-frequency in the proper doses and

at sufficiently frequent intervals will give results well worth the trial.

404 Mercantile Library Building.

Safe on First. Mother (looking through magazine): Darling, I see from statistics given here that every third baby born in the world is a Chinese.

Father (fondling his first born): Then thank God this is our first.)—*Everybody's.*

ELECTRIC MAGNET IN EYE WORK

Ira O. Denman,
Toledo, Ohio.

THE magnet is a valuable adjunct to ophthalmic practice. In cases of embedded steel, filings or other small pieces which lodge in the cornea, an application of the giant magnet will often dislodge the invader with greater facility and less destruction of corneal epithelium than the use of the spud.

In cases injured by flying particles which strike the eye with greater force, it is often difficult or impossible to determine whether or not the foreign body merely struck the eye and fell away, or whether it has by sheer force penetrated the sclera and remains within the globe. Such cases can usually be diagnosed by the application of the giant magnet very near to the cornea, but not touching it, and if the steel is embedded, the patient will feel a decided twinge of pain when the current is applied.

The magnet is employed in two ways in the removal of steel from the eye. One method is to place the pole of the instrument directly upon the site of the puncture of the globe and extract the metal through its own point of invasion. This is only possible in instances of incomplete entrance through the tunics of the eye—the piece still sticking in the aperture made by itself. If it has completely punctured the eyeball, it is clear that one could not hope to extract it at its point of entrance, since in every case the particle would be at large within the eye.

The other plan, and a much surer and better one, is to apply the magnet to the center of the cornea, endeavoring thus to attract the steel into the pupillary area and if possible into the anterior chamber, where it is extracted by making a puncture of the corneo-scleral margin with a keratome or Graefe knife.

The x-ray is, of course, a valuable aid in localization of particles of sufficient size to be shown by it.

The damage done to an eye by the penetration of a particle of steel large enough to require a magnet operation is often considable, yet many eyes are preserved with a serviceable amount of vision.

Some are ruined by injury to the ciliary body or choroid and most injuries are followed at least by a traumatic cataract.

425 Ohio Building.

The popular doctor answers a call promptly.

Apologizes when late on his rounds.

Is hopeful, happy, clean and strong.

Makes a fuss over the children.

Has an easy, gracious manner.

Has a kindly, helpful telephone voice.

Never argues against home remedies.

Explains disease, its course and prognosis.

Never hurries in the sick room, but does all his hurrying outside.

Offends neither the modesty nor principles of his patients.

Treats every patient as though that were the only patient he ever had.

Knows no class-distinction, but extends to women the deferential courtesy due her sex, whether he meets her in hovel or ballroom.

Invariably speaks to people on the streets (albeit they *are* wearing a bandage of the other doctor put on), and shows an interest in their afflictions.

Listens patiently and responsively to the detailing of symptoms, both real and imaginary, even though it be the tiresome wailing of the hypochondriac.

And, finally, the Popular Doctor is keen enough, when a question arises, to pretend that the patient is always right, never wrong. On this point "hangs all the law and the profits."—S. C. C., in *The Bulletin*, Blair County Medical Society.

PNEUMOMASSAGE OF THE EUSTACHIAN TUBE AND TYMPANUM

Alva Sowers, M. D.,
Chicago.

THERE are many instruments designed for the purpose of producing vibration in the tympanic cavity. The one we have found most useful in our practice is a modification of the original Meyer vibrator.

Treatment with this apparatus consists of pneumomassage of the Eustachian tube and tympanum. Inflation is accomplished by means of the ordinary Eustachian catheter connected by a hose with the compressed air supply. The air in passing from the supply tank to the ear travels through a small chamber in the machine. This air chamber is capped with a mica disc which is made to vibrate when struck with a little electric hammer. The rapidity of the vibration is controlled by a rheostat governing the flow of electricity. The pressure of the air is regulated by the thumb on the cut-off. Hence the intensity of the treatment depends upon the rate of vibration and upon the air pressure.



A filter is placed on one of the connecting hose and if desirable the air may be medicated as it passes through the filter. During the treatment an auscultation tube is used to determine the patency of the Eustachian tube, that we may be guided as to the intensity of

the treatment required. It is well to have an auscultation tube with three tips—one for the treated ear and one for each of the operator's. In this manner the extraneous sounds which might confuse the operator are eliminated. With very little practice one can gain through ausculation considerable information of diagnostic and prognostic value regarding the condition of the Eustachian tube.

The form of vibrator here described is useful chiefly in those cases dependent upon tubal occlusion. Tinnitus of recent development has responded favorably in many cases of our practice

It is to be understood that intra-nasal treatment should be given, when indicated, in addition to the pneumo-vibration if lasting results are to be expected. In many cases intra-nasal surgery is necessary, such as correcting deflected septa, reducing hypertrophied turbinates or draining the sinuses. In cases of long-standing a course of at least twenty treatments is advised before the result can be determined, as stricture of the Eustachian tube offers much resistance and repeated dilatation is necessary to gain the desired effect.

The frequency, length and intensity of the treatment vary with each case. As a rule, three to five minutes for each ear three times a week is required. The interval may be lengthened until one treatment a week will suffice. We recommend that all patients have a few treatments following each acute attack of rhinitis.

122 South Michigan Avenue.

THE GALVANIC TEST AS AN AID IN THE DIFFERENTIAL DIAGNOSIS OF INNER EAR FROM VIII NERVE AFFECTIONS

George W. Mackenzie, M. D.,
Philadelphia.

AFTER an experience of eight years with the galvanic test the writer finds that he has nothing to retract from his first published statements on the subject.*

As an aid in the differential diagnosis of these two conditions there is no test equal to the galvanic. Furthermore, when understood, the test is easy to carry out and the technique simple. The discomfort to the patient is considerably less than that produced by either the turning or caloric test, at the same time the associated vertigo is less intensive and under better control.

Normal individuals react with the galvanic current as follows:

Right Ear	*Left Ear*
Cathode 4 milliampère ↶ R.	Cathode 4 milliamp. ↷ L.
Anode 4 milliamp. ↷ L.	Anode 4 milliamp. ↶ R.

The cathode, or negative pole, is applied to the tragus, pushing the tragus into the external meatus, while the anode is applied anywhere else on the body, preferably in the hand (either right or left hand). With a current of four milliampères there is produced a rotatory nystagmus to the same side. Reversing the polarity produces nystagmus to the opposite side. The electrode applied to the ear should be quite small, not over one-third of an inch in diameter—preferably one-quarter inch. It will be seen, therefore, that the reactions are equal on the two sides with the same polarity, and on the same side with opposite polarities. There is a perfect balance representing the normal. Deviations from this balance must be abnormal and due to pathologic causes. Variations may occur in different normal individuals as to the strength of current required to produce a reaction; however, the balance referred to above is maintained.

In a case of recent labyrinth destruction from, let us say, acute labyrinth suppuration, we find the typical reaction to be as follows:

*Klinische Studien über die Functions prüfung des Labyrinthes mittelst der Galvanischer Stromes. G. W. Mackenzie, Archiv für Ohrenheilk. 77 Band. 1 heft. Sept., 1908.

Right inner ear destroyed	*Left inner ear intact*
Cathode 7 or 8 milliamp. ⌒ R.	Cathode 1 milliamp. ⌒ L.
Anode 1 milliamp. ⌒ L.	Anode 7 or 8 milliamp ⌒ R.

It will be noted that the anodal reaction of one side balances the cathodal of the other. With a right-sided inner ear destruction the patient manifests a more or less rotatory nystagmus to the left side. After a few weeks it has so diminished in intensity that it is barely apparent. The slightest amount of current with the anode to the right side will accentuate or *push* the nystagmus to the opposite side. So, too, will the cathode to the left ear *pull* the nystagmus to the left.

On the other hand, it takes considerable strength of current on the right side to stop the nystagmus to the left or pull it to the right. This reaction is due to the galvanic action on the *nerve* and *not the end organs* in the ampulla, for these latter have been destroyed by the suppurative process in the inner ear. Furthermore, since the eighth nerve is intact on the right side there is maintained some tonus to the right side in spite of the inner ear destruction, but less than when the inner ear is not affected. Accordingly the intact eighth nerve is capable of some reaction to the cathode, say with 7 or 8 milliampères. The moment secondary degeneration of the eighth nerve occurs this reaction ceases. This gives us a cue as to the reaction to be found in cases of eighth nerve neuritis.

In eighth nerve neuritis of the right side the galvanic reaction is as follows:

Right side	*Left side*
Cathode 8+milliamp. No react.	Cathode 1 milliamp. ⌒ L. Incr.
Anode 8+milliamp. No react.	Anode 8+milliamp. No react.

1831 Chestnut Street.

ELECTRICAL METHODS IN AURAL INSPECTION

L. E. Hetrick, M. D.,
New York.

THE question of electrically lighted instruments in ear, nose and throat cases has not been satisfactorily settled. Each instrument has some real or fancied virtue, but no one instrument has been found for all cases.

In the examination of the ear, the external ear is best examined by daylight if possible; at night, however, reflected or artificial light is needed and in my experience the old-fashioned head mirror with the aid of a high-powered electric light is best. Next to this I prefer the Klaar head-light. This is the only electrically lighted head-light that I use.

In examining the external canal I use first the old head mirror and reflected light with the aid of the ear speculum which fits the case.

For inspection of the drum membrane and observing its motility and that of the ossicular chain I prefer the electrically lighted Siegle otoscope. This instrument, I feel, is essential and should be in the armamentarium of every aurist. With this instrument a good illumination of the drum is obtained together with some magnification, so that atrophic areas and many points are brought out which otherwise would be seen only with great difficulty, if at all.

For illumination in the mastoid operation, I have found the Klaar head-light to give me the best results. This light may be used either with a pocket battery or the street current with a proper rheostat interposed. I use the pocket battery, as this does away with all overhanging wires. This light is one of the best for work in the mouth and throat. I have not found it so useful in the nose, as it is constructed for binocular vision. In the nose we come back to the old-fashioned head mirror and reflected light. So far nothing has supplanted it. However, the naso-pharyngoscope will be found to give valuable aid, especially in the examination of the posterior ends of the turbinals, the naso-pharynx and the orifices of the Eustachian tubes. By means of the naso-pharyngoscope manipulations of instruments in the opposite Eustachian tube may be observed, and tubes

which were difficult to catheterize become easy.

The naso-pharyngoscope may be used also in trans-illumination of the frontal and maxillary sinuses and the mastoid process.

It will be seen from the above very brief review of the matter that while no one electrically-lighted instrument will give universal satisfaction, some give good results in given cases, while others are absolutely indispensable. So each man must search out the instruments best fitted for him and his work.

4 West 93rd Street.

MEDICAL COLLEGES AND PHYSICAL THERAPEUTIC MEASURES

The medical schools of the country are giving but the most superficial attention to physical therapeutics. To their credit the homoeopathic schools have been more advanced in giving place to this department of medicine than the regular school of medicine. We are pleased to note, however, that the Fordham Medical School, under the tutelage of Dr. Albert C. Geyser, is giving place to these important subjects. The questions for examination submitted to the graduating class in that school are practical, and show that subjects are being taught in their curriculum in a manner that will bring the students to a fuller recognition of their importance in medicine.

How the schools connected with the great universities in the country can ignore the subject in the light of what may now be known cannot be explained, except on the ground that those who do not know, and have not been willing to give the time to investigate these important subjects are afraid to have the subjects in the curriculum lest they cast reflection upon their own ignorance. It is a well established fact now that opposition is due to ignorance and want of confidence in others mingled with a fear that there is something of truth in it.—April, 1915, *Jour. of Advanced Therapeutics.*

THERMIC PENETRATION

CHARLES EHA, M. D.,
Cincinnati, Ohio.

OF all forms of electro-therapeutics the high-frequency current appeals to the modern physician most favorably. Truly other currents have their distinct features, but when the physician wants an ever-ready remedial agent applicable to ninety per cent. of his cases, the high-frequency current is the one to select. One need not determine polarity nor apply wet pads to sensitive skins, nor delay the treatment until the machine is charged; the coil or modern high-frequency machine is always ready.

This convenient form of treatment deserves a careful study of the few fundamental principles from which varieties of applications may be evolved. Frequency means the rate of alternations or oscillations in an alternating current. This current, being continually alternating, has no positive or negative poles to determine.

The principal varieties of high-frequency current are the D'Arsonval, Tesla and Oudin. The latter two are very important and much used in numerous ways by electro-therapeutists. But the features of the D'Arsonval are very unique and endless in their application. The D'Arsonval current is produced by having a solenoid (coil of wire) connecting the outer coatings of two Leyden jars. The current is supplied to the inner coats of the Leyden jars from some source of high voltage, such as a coil transformer or static machine. The current derived from the ends of the solenoid connecting the two Leyden jars is known as the D'Arsonval. In this current the voltage is diminished and the amperage is large. This large amperage furnishes us a current of great heat-producing qualities.

The D'Arsonval is administered in two ways: First, by general or auto-condensation method, whereby the patient reclines or sits upon a heavy pad or cushion of non-conducting material at the bottom of which is placed a metal plate connected to one side of the D'Arsonval solenoid. The patient holds a metal bar connected to the other end of the D'Arsonval solenoid.

By this method a current of from 300 to 800 milliamperes may

be made to traverse the system of the patient without any other sensation than a slight degree of warmth and after some time a mild perspiration. This is a favorite method for reducing high blood pressure. Treatments to be given daily or on alternate days. Each treatment to last from fifteen to twenty minutes. The above application may be modified so that the patient reclines on the couch or chair, but instead of holding the electrode a glass vacuum electrode may be attached to this wire and this glass electrode applied to some particular part, such as the eye, ear, nose or various parts of the head, chest or abdomen. Thus the part to be treated may require modification in shape and size of the various tubes. Local application of electricity may be supplemented by this general auto-condensation method, especially where there is an increased blood pressure. Much more could be said of this method.

The second or direct method of D'Arsonval is fast growing into popularity, due to its simplicity and favorable results. It consists in applying two metal electrodes opposite each other. The greatest amount of heat will be midway between these electrodes if the surfaces of application of both electrodes are the same. This is best demonstrated by applying the electrodes on each side of the potato. After a mild current has been sent through the potato and it is opened it will be seen that the center of the potato is thoroughly cooked, while the part nearest the surface is less affected. The conclusion we draw from this is that this potent form of electricity spends its main force deep in the part being treated between the electrodes.

In giving this form of high-frequency, we use large pliable metal plates, 8 x 10 inches, for the back and hips, 4 x 4 inches for shoulder, knees and smaller parts, or large electrode over back and small electrode over distant parts, as middle of thigh. Head affections are treated by placing electrode over upper spinal region and smaller electrode over forehead or other part. Sometimes instead of this second or special electrode a glass vacuum electrode adapted to the part to be treated is used. The edges of metal electrodes must be turned away from the skin to avoid sparks. Electrodes must fit evenly and snugly the part being treated. Treatments fifteen to twenty minutes daily or on alternate days.

Corner Erie and Edwards Road.

THE U-SHAPED ELECTRO-MAGNET

By George T. Fette, Ph. D., A. M., D. D. S.

Cincinnati, Ohio.

If the successes and failures in the use of the giant electro-magnet are to be the criteria for the general adoption of the instrument for diagnosing the presence of ferric bodies and their actual removal from the eye, one can scarcely pronounce upon the question without the factor of efficiency having been sufficiently established. Statistically it is known that in a number of instances the presence of ferric material was revealed after enucleation, which had proved negative to the magnetic test of some type of a giant electro. In a few cases—known to the writer—successful extraction was accomplished by the U-shaped combination, which cases also had previously responded negatively to the application of some other style of a giant magnet. The negative indications and consequently the failures recorded may thus be safely attributed to the want of a more powerful instrument.

A prevalent objection to the giant magnet, namely, that a too powerful extraction may do untoward injury to certain parts of the eye—like the formation of a scar, the laceration of the ciliary muscles, etc.—may be answered in the statement that the danger vanishes in proportion as the course of movement of the ferric body to be extracted can be controlled by the operator. This means of control, which one might designate as the *directional attractive power* of the magnet, is afforded by the design of the U-shaped magnet as we shall presently see. As can be gleaned from the preceding remarks, a good design of an electro-magnet should, in the first place, possess the greatest possible efficiency *magnetically*, and, secondly, afford a means of controlling the flux-path. As to the first requirement we submit the following consideration. The maximum magnetic density of any magnet is had when the magnetic circuit consists of a completely closed ferric tract, as we have an example in the horseshoe magnet when an armature, or a keeper, as it is called, is placed across the pole ends. The practical utility of such an arrangement is exhibited

in the lifting magnet. But as in a closed ring of this kind, called a solenoid, no magnetic action is manifest outside of the ferric tract, a break or gap somewhere in the circuit becomes necessary in order to catch the lines of force as they pass from one pole to the other. But since the magnetic density diminishes proportionately with the length of the aerial gap, it has been the writer's aim to keep this gap as small as possible. In the first design the shortest aerial gap was one

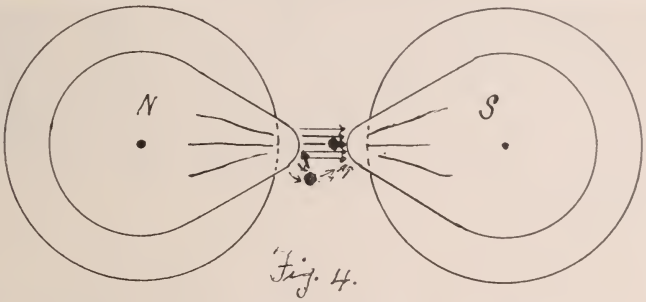


Fig. 4.

and a half inches (Fig. 4). With this spatial distance the magnet exerts an attractive force of 72 pounds per square inch. In the writer's second design (U. S. Letters Patent No. 1033883) the pole pieces can be adjusted to considerably shorter distances—in fact, up to perfect contact of the pole tips (Fig. 5) by simply rotating the pole pieces upon the core faces of the magnet. The magnetic flux can thus be vastly augmented.

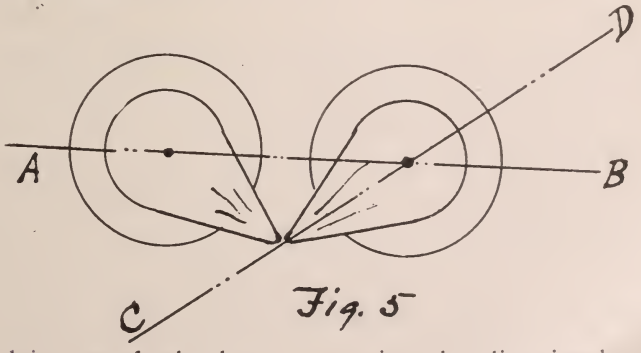


Fig. 5

The claim put forth above, respecting the directional attractive force of the U-shaped magnet, becomes apparent when we consider that the ferric body to be extracted is dragged into the flux-path and thence to the nearest pole of the magnet. Now the flux-path being locally defined as passing from one pole tip to the other, we can pretty nearly make out what course the ferric body will take in its extraction.

There being two pole tips whose relative position can be determined at will, it simply remains to so adjust the patient before the magnet that the affected eye, right or left, comes to the nearest pole of the magnet.

If a radiograph showing the location of the ferric body in the eye is first obtained, the directional attractive force of the U-shaped magnet can be accurately applied. Space being necessarily limited, the writer would kindly refer the reader to his original articles "The U-Shaped Electro-Magnet for Surgical Purposes and Its Calculations" (*Lancet-Clinic*, April 25, 1914) and "The 'Iron Clad' Electro-Magnet for Surgical Purposes with a Discussion of the Comparative Value of the U-Shaped Combination" (*Lancet-Clinic*, Dec. 19, 1914).

425 Clark Street.

MY EXPERIENCE WITH ELECTROTHERAPEUTICS IN OCULAR DISEASES

With Special Reference to High Frequency

By LeRoy Thompson, M. D.

Chicago.

SO much has been said for and against electrotherapeutics as applied to ocular pathology, that anyone who attempts anything original must be ready to meet criticism, bordering almost on rebuke.

Our confreres, who make electrotherapeutics their only specialty, are the ones to whom we must look for the results of original research; therefore in presenting this subject I am only going to relate my personal experience with electricity as I have used it.

A great deal is written and published by manufacturing firms who sell electrical apparatus exploiting their particular goods, so I will not go into details regarding the necessary machines, but simply state that the same principle applies to electric apparatus as to any other office equipment, viz: results cannot be obtained with poor electric instruments or without a fairly wide knowledge of the therapeutic principles, as well as a thorough understanding of electric currents when applied to the human body.

The galvanic and faradic currents have been used in some eye conditions; the galvanic current is used chiefly for the galvano-cautery, especially for corneal ulcers, and for electrolysis (passing an electric needle into the tissue) which has been recommended especially for ingrown eyelashes, but also for opacity of the cornea, growths of the eyelids and trachoma. The galvanic current has been recommended also for use in optic nerve atrophy.

The faradic current is employed chiefly in muscular paralysis, but Darier says that this should be replaced by the galvanic current, "when muscular contractions begin to occur." Reuss has used the faradic current for various inflammatory conditions, the negative electrode being held in the hand, and the positive, especially constructed eye electrode, applied to the eyes.

The most recent practice, however, points to the use of high

frequency currents and its various modifications in eye diseases. The high frequency currents are distinguished by the production of a marked degree of heat in the tissues. In eye diseases glass vacuum electrodes are usually employed. The glass electrode, as a rule, is held in contact with the eyelid, while the eye is closed, or it may be moved back and forth over the eyelid.

When high frequency current is applied to any part of the human anatomy there is no particular sensation except a feeling of warmth at the point of contact with the body, or at most a slight prickling sensation due to peripheral sparking, and when administered by means of the auto-condensation chair we get no discomfort whatsoever and are enabled to give our patient a current of great strength.

Bacteria of all kinds are killed very rapidly by the spark light emanating from the electrode. D'Arsonval states: "The carbonic acid of respiration is increased one hundred per cent. and heat doubled by the use of high frequency." This would account for the increase in body-weight after treatment. Careful urinalysis before and after the use of high frequency currents show that the quantity is increased, also the absolute quantity, urea, uric acid and urine salts, show an increase several days after.

The dose of high frequency is practically unlimited if we use the higher interruptions; in fact, the higher the interruption the less sensation there is of any kind. As an illustration I would quote the experience of Tesla, who lighted ten sixteen candle-power lamps drawing five amperes of current with his body in the circuit. This is rather remarkable when we compare it with the action of galvanism, as one-half of an ampere has been known to be fatal.

High frequency currents are recommended especially in catarrhal conditions of the eye, inflammation of the retina, iritis, atrophy of the optic nerve, corneal ulcer and trachoma. It is indicated in various forms of conjunctivitis and especially in the chronic palpebral, where used as an adjunct measure it will go a long way toward effecting a cure.

In blepharitis marginalis I use it on every case, and while in no instance has it effected a cure by itself, it has been of great assistance in the final recovery. In one very obstinate case I used it continuously, applied to the eyelids by means of both large and small electrodes, with absolutely no results. I have the case recorded as a failure, but

it might be of interest to state that the patient is still uncured, nothing having been found by many different consultations and as many different methods of treatment to help in any way. I therefore cannot absolutely lay all the blame on the inefficiency of high frequency.

In muscular asthenopia I have found that alternating high frequency with sinusoidal current seems to have a more therapeutic effect than sinusidal alone.

In an aggravated case of Bell's palsy, in a girl twenty-two years of age, I found that the patient did not respond readily to negative galvanism and thorough eliminative treatment, but on using high frequency, applied thirty minutes every other day with a large vacuum electrode to the eye and over the cheek, improvement began after the second treatment, with ultimate recovery.

Clark employs desiccation in eye diseases. This is a "drying-out with a monopolar current short spark of high frequency and high tension, the action of which is not carried to cauterization." (Brainbridge.)

Clark says: "Desiccation may be applied to the conjunctiva in trachoma, dry granular conjunctivitis, epithelioma and to the cornea for granulating ulcerations and pterygium. There is no danger in working near the eye, as the control of the desiccation current is absolute."

A few German physicians have found diathermy useful in eye diseases instead of the usual forms of high frequency current. This method consists in "heating the diseased tissue to a higher or lower degree by means of a bipolar current of high frequency, relatively low tension and relatively high amperage." (Brainbridge.)

The German authorities cited in the bibliography have recommended diathermy in most corneal diseases, iritis, iridocyclitis, and trachoma. Nagelschmidt recommends it in treatment of tuberculosis of the eyelid.

Conclusion.—Electricity in any form must not be considered a cure-all, but as an adjuvant measure is very, very valuable, and I should feel at a great loss to be without it in practicing my specialties.

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THE ELECTRIC OPHTHALMOSCOPE.

By Dean W. Myers, M. D.,
Ann Arbor, Mich.

In no field of medicine and surgery has the advancement of electricity and of electrical apparatus been more felt nor more appreciated than in the field of ophthalmology. The old-time reflecting ophthalmoscope and retinscope are rapidly giving way to the more modern and more convenient and more accurate electrical instruments which are being placed upon the market by a number of our best manufacturers. The old method of indirect ophthalmoscopy is rapidly disappearing and the days of direct ophthalmoscopy by reflected light are also numbered. With the new electric ophthalmoscope we are able to study the details of the entire fundic field without disturbance to the patient or to the examiner, and also without necessarily the advantages of the dark room. We are, in fact, able to make a very satisfactory examination of the fundus in broad daylight. Another great advantage of this instrument is its extreme usefulness when the oculist must examine the eye of his patient in the latter's home. Here he is just as able to make a careful and thorough examination as if he had the patient in his own well-equipped office. The value of the instrument will be appreciated by those who have formerly had to make an examination of the fundus in the patient's home, where seldom is found an appropriate light to use with the old style ophthalmoscope. The ease with which the fundus is examined, the clearness of the field and the extent of detail render the study of the fundus by this method much more interesting and much more accurate than could possibly obtain under the old method. The discovery and outlining of isolated areas of choroiditis is greatly facilitated by the use of this instrument, since the examiner may move from one position to another in front of the patient's eye without getting out of focus or out of line of his light. In studying the details of disc changes in glaucoma, optic neuritis and nerve atrophy, the instrument also proves a wonderful help in its clearness of detail. There is no doubt but that the adaptation of the electric lamp to the ophthalmoscope marks a

notable era in the development of the instrument, and, had it not been for the cumbersome batteries required for lighting it, the full value of the accomplishment would have been realized long ago. However, the complete solution of this problem remained for the advent of the miniature tungsten lamp which, owing to its intense brilliancy and exceedingly small current requirements, admitted of an enormous reduction of battery bulk without an apparent loss of power or duration. In consequence, therefore, of this extremely efficient type of lamp we now have a battery in a small handle of convenient size for holding in the hand. A miniature rheostat has also been provided for control of the current. On the whole, the electric ophthalmoscope is an indispensable part of the armamentarium of the oculist and also the aurist, for, with the otoscope attachment to the same handle, we have a most complete instrument for examination of the external auditory canal and membrana tympani.

Wood (Methyl) alcohol should be labeled as a poison, with the usual skull and cross-bones and the warning not to be used internally or externally. The Governor of Rhode Island has signed such a law. Not many months ago three people were killed and two blinded by drinking a cordial in the making of which wood alcohol had been substituted for grain alcohol. In 1912, in New York City alone, not only were there three deaths, but twelve persons were blinded from the effect of methyl alcohol upon the optic nerve. Industrial chemistry has so thoroughly refined wood alcohol that most of its formerly objectionable features (color, taste and odor) have been removed. Denatured alcohol is just as serviceable in the household and far cheaper.—Editorial, *Med. Rev. of Rev.*, Aug.

A CASE OF LARYNGEAL PAPILLOMA TREATED AND CURED BY THE ROENTGEN RAYS

Drs. Isaac G. Shallcross and Weston D. Bayley,
Philadelphia.

THE objects sought in the treatment of laryngeal papillomata are the complete removal of the growth and the preservation of the purity of the voice. Realizing these two desiderata, I have always made some effort to cure the condition before resorting to mechanical interference. Papillomatous growths are usually attached to the true vocal cords and surgical methods to be satisfactory must, of necessity, require the complete removal of the neoplasm; this removal, frequently, is accomplished only at the expense of some healthy tissue, and that often results in a permanently aphonic or hoarse voice.

Again, in papillomatous growths recurrence is quite common and the operator as well as the patient is very liable to become discouraged. Medical or non-surgical measures therefore are more satisfactory if the case responds, as the vocal cords are not injured and recurrence is less likely.

In my own practice I have tried every method—internal medicine, local applications, cautery, operation both by the direct and indirect methods and also the x-ray. I have had good results and also unsatisfactory results. Thuja Ø has given me the best results, both as an internal medicine and a local application, although conium has apparently helped some cases. With the thuja (alcoholic tincture) given internally and applied locally directly to the growth two or three times a week, and supplemented by a spray of the same drug to the larynx three to five times a day, I have, on several occasions, seen absolute cures; much more satisfactory than any operative measure could be; of course, such methods are not to be thought of where stenosis is a factor. In spite of the very good results I have seen in some cases, I have met a number of disappointments, as the case I am about to relate will illustrate. Unfortunately the discouragements I met in this case were so many and so pronounced that my records were neglected somewhat. I can simply state, with-

out dates, what was done and how the final satisfactory result was obtained.

On July 17, 1893, Mrs. A. A. R., aged 24 years, consulted me regarding an aphonia, which had lasted, according to her statement, about six or eight months. This aphonia had progressed gradually from a slight hoarseness until it was complete. She had no pain; complained of a tired, full feeling in the throat, but no dyspnoea. There was no marked loss of flesh.

Examination revealed a small tumor, which proved to be a papilloma. In size it resembled a grain of barley. Its attachment was directly under the middle third of the right vocal cord, quite near its free edge. During the following year the thuja treatment was vigorously tried, but with no success; operative measures were resorted to, resulting in the partial removal of the growth. Three times during the first year I felt that I had removed the entire growth, but each time was doomed to disappointment, as the growth recurred. From July, 1894, I used thuja for long periods, following efforts to remove the growth surgically, and it seemed to limit, if it did not cure, the condition. During the following ten years I resorted to the old methods and several times tried the galvanic cautery, after which the growth seemed to increase more rapidly. Slowly it crept into the anterior commissure and then along the edge of the left cord; always as a small, flat growth, distinctly papillomatous in character. Stenosis never was a complication. My discouragement was so great that I despaired of ever getting a result; told my patient so and advised her to try some one else. But again I was doomed to disappointment; she refused to have any other physician.

The Roentgen ray had never been used, to my knowledge, in the treatment of papilloma of the larynx. It has been used successfully in the treatment of malignant epithelioma of the skin and mucous surfaces, why should not a like result be obtained in the benign epitheliomatous growth. I resolved to try it in this case and referred Mrs. R. to Dr. Weston D. Bayley, who will give his account of the x-ray treatment. I watched the results very carefully, and found after a few weeks' treatment that the tumor became much lighter in color and diminished in size. Mrs. R. had two severe x-ray burns. At the time of the first burn, the growth had been reduced to one-third its former size. The treatment had to be discontinued and in a very

short time the growth had assumed its former size and color. After the cure of the burn the raying was resumed and then the tumor again became pale and smaller; after fifteen months' treatment there was only a small, thickened spot beneath the site of the original growth; her voice was still aphonic. Again she was severely burned and the raying was discontinued.

The site of the tumor was now treated with a solution of argyrol twice a week for about a month, at the end of which time, the spot of thickened tissue, the site of the original papilloma, had completely absorbed, and for the first time I heard her speak with a clear, natural voice. In a short time her singing voice was regained, and now after ten more years there has been no recurrence; and for the last four years she has been working as a telephone operator. Should this case not be recorded as a cure to the credit of the Roentgen ray?

II.

It is with some amusement that I dig out the dusty record of this case and recall the misgivings which came to mind when Dr. Shallcross asked me to treat it with the ray. As a matter of fact he had two cases simultaneously. The other one became alarmed at the idea of a possible x-ray burn, stopped after several treatments and died later from an extirpated larynx. This patient, however, stuck to the treatment with infinitely more faith in me than I had in myself. Personal experience with x-ray therapy was then very slender, and the equipment we would now think very crude. It consisted of a static machine and some of those early tubes without regulators, some of which may yet survive as curiosities in the museums. At any rate, the lady had a fair chance to die some day from obstruction, and being warned that she would probably be burned and scarred for life she was willing to proceed. The old tubes were getting pretty "hard" by that time, and I exposed the region of the larynx through a fenestrated lead shield for twelve to twenty minutes daily until held up by dermatitis. In all there were 147 exposures during the period between May 5, 1913, when she was referred to me, and September 5, 1905, when she was regarded as cured. She bears a typical x-ray scar over the exposed region, which now, after ten years, does not look so bad. At any rate the patient has a decided conviction that she would not exchange the scar for the papilloma, so everybody is satisfied.

It was interesting to observe the weakening tendency to recurrence

during each pause in treatment for the subsidence of a dermatitis; I say weakening, because in the late portion of the treatment there was no recurrence visible, but a gradual absorption and finally a disappearance. The patient had been voiceless for ten years, but began to get tonal speech in January, 1905, and after recovery resumed singing in a church choir.

Home culture for diphtheria. To save time involved in sending to a distant laboratory: An ordinary vacuum bottle full of water heated to 119 degrees, F.; a test tube of Loeffler's blood serum, inoculated by a sterile swab which has been drawn across the throat exudate *at least* two hours after any antiseptic treatment; the tube is suspended (by thread) in the water in the bottle, the bottle is corked and the cap screwed tight. After ten or twelve hours if a growth has appeared it is usually diphtheria; this may be quickly determined by making a smear, fixing and staining with Loeffler's methylene-blue and examining with a 1-12 oil immersing lens. If lacunar tonsillitis, streptococci will be found, not the Klebs-Loeffler bacillus. Critic and Guide. (Abstr. J. of Miss. State Med. Assoc.)

STATIC ELECTRICITY IN THE TREATMENT OF THE EYE, EAR, NOSE AND THROAT

ARTHUR W. YALE, M. D.,
Philadelphia.

WHILE the use of electricity in the treatment of disease may be regarded by many as a modern therapeutic measure, the fact is that in 641 B. C. the first electrical treatment was given by Dr. Thales, of Miletus, the means used being a static discharge produced by friction on amber. Over two hundred years ago physicians began using the static machine, and ever since that time manufacturers have been trying to produce an apparatus "just as good" to take its place. Why?

First, because the static machine is expensive. Second, it is very troublesome to keep in good working order. Third, it is large and cumbersome and requires a great amount of active effort in giving its different modalities. Fourth, in order to produce results the treatments with the static machine must consume a large amount of time.

Nevertheless, in electro-therapy there is no other apparatus "just as good." Static modalities are far superior to other forms of electricity in almost every condition susceptible of relief or cure by electro-therapy. Any physician who has a fully-equipped electrical laboratory and has used a Holtz machine carefully will verify this statement. The galvanic and faradic currents have had their day and the popularity of the high-frequency currents are now in the ascendancy. However, the static current is gaining in favor, not spasmodically, but regularly, year by year, because with it physicians are producing permanent results heretofore unattainable. The reasons that such results can be secured are easily explained on a scientific basis. The higher the voltage of the current the greater is its depth of penetration, and the less it can be deviated from a straight course. The galvanic current is from 4 to 20 volts, high-frequency current, when produced from a suit-case coil or a small generator, from 15,000 to 20,000 volts. The high-frequency current produced from Leyden jars filled from a coil or step-up transformer (5 K W) is from 25,000 to 100,000 volts; static current, 600,000 volts; with the Oudin-Tesla resonator, 5,000,-

000 volts. The latter current will penetrate with ease glass half an inch thick. Hence it will be seen that static currents have by far the greatest penetration.

Perhaps the strongest reason for the good results obtained with the static current is that it produces more intense and quicker physiochemical changes than any other modality. Broadly speaking, all chemical changes in the body are the result of a loss or gain of oxygen (O_2), and the consequent deoxidizing or oxidizing of some complex organic chemical substance. This may later lead to tissue changes. We know that almost all noninfectious diseases without cell changes are due to deficient oxidation. If there is a deficiency in the oxidizing process we call it deficient metabolism. We used to term it "uric acid diathesis." There is no method of treatment that can approach the properly applied static current in its power of increasing oxidation, for this has been proven chemically, and is always susceptible of laboratory proof.

We must also take into consideration the mechanical effect that can be produced by the wave current or its modifications; viz., the intense tissue and cell contraction, the squeezing out of the old lymph and the increase of the local circulation, the "hyperemia without stasis," so impressively spoken of by Dr. Snow.

If these foregoing facts are borne in mind it will readily be seen how useful the different static currents may become in the hands of skilled physicians.

At this point a word concerning the type of machine to be employed. A Holtz machine charged from a Whimshurst produces a current of higher voltage than any other type, and one that is positively unidirectional. This is, by all odds, the best type machine for the purpose. The writer makes this statement after an experience of several years with two popular makes of the Western type of static machines.

A few remarks of interest to the aurist and other specialists are now in order:

Middle ear trouble has always been the bane of the aurist. At last some method has been devised of reaching this heretofore inaccessible part. An accelerated flow of blood through the middle ear may be produced by connecting a DeKraft blue-pencil applicator to the positive pole of the static machine, letting the discharge strike

the external auditory meatus, and placing a metal pad connected to the negative pole over the opposite ear. This treatment should not be used in the presence of a pyogenic process, but is the treatment *par excellence* in all congestions of the middle or internal ear. Treatment should be given daily for half an hour to an hour. The writer has had cases in which a marked thickening of the membrana tympani has undergone a sub-involution, and in which ankylosed ossicles have been loosened. Such cases require treatment extending over a period of from three months to a year, but of what account is time, when it is a question of curing such heretofore hopeless cases?

This same current is very useful in treating throat affections. In the throat, as in the ear, the flow of blood through the affected parts is accelerated, and the old lymph and waste products are carried off,—"hyperemia without stasis."

Almost every case of acute mastoiditis may be cured without operation in conjunction with phototherapy if treated early.

The resonator discharge, a true high-frequency current of about 5,000,000 volts, is also extremely valuable in affections about the head. By this means powerful contractions are secured. This current may also be given through properly constructed vacuum electrodes and excellent results secured, especially in the respiratory tract. Hypertrophic rhinitis can thus be easily reduced and practically every case of enlarged tonsils relieved. The author has had patients with crypts in the tonsils the size of a large pea, and so hypertrophied as to meet in the median line. In such extreme instances it is easy to observe the action of the current, which to those unfamiliar with this modality, must appear almost marvelous.

Ulcers of the cornea and all external eye injuries may be decidedly helped by the frequent application of the current with properly fitting electrodes. This local effect may also be produced in any desired location in the eye, ear, nose and throat.

Then, too, we must take into consideration the general action of the static current. Its action in local anemais has already been referred to, and the same effect may be produced on general anemic conditions. The number of red cells is increased and their oxygen-carrying power markedly improved. Ptomaines are oxidized and excreted. The action on the total solids of the urine, particularly the urates, is decidedly increased. Evidences of these changes may readily be observed

with a microscope and through a chemical examination of the excrements. The treatment causes the entire skin of the body to become a delicate pink, and the length of time that each treatment should be continued may be governed by the appearance of this tint. Needless to say, the general condition plays a marked role in the curing of local chronic disease, and the higher the tone of the general health the more quickly will the local diseased areas be removed by absorption or subinvolution.

The foregoing statements are general; but if the specialist can only be brought to understand the underlying principles he will find the static current invaluable. Indeed, it is so far superior to any other modality that in skillful hands some deaf may hear, some blind may see, and some lame walk.

A LARGE CALCULUS IN WHARTON'S DUCT

ALICE V. MACKENZIE, M. D.
Philadelphia.

ON February 2, 1915, Mrs. T. J. L. was referred to me for operation by her family physician with the diagnosis of a calculus in the duct of the left submaxillary gland.

The patient gave a history of having had an occasional swelling under the left jaw accompanying colds, which always disappeared without treatment at the termination of her cold. She denies any tendency to throat trouble. She claims to have some gouty disturbances in her finger joints. Occasional puffiness of the face on both sides.

During the last week the patient has had an attack of pharyngitis which was followed by a swelling on the left side of the throat, without soreness, noticeable particularly in the morning. No treatment had been previously attempted except the application of heat.

Externally, there was visible an enlargement in the region of the left submaxillary gland, which was tender upon firm pressure. By bimanual palpation over Wharton's duct a large, hard body, somewhat larger and more plump than a lima bean, was detected. Surrounding and posterior to this body the tissues felt indurated.

The patient was sent to Dr. J. W. Frank for a Roentgen examination. Following is Dr. Frank's report: "A shadow on the left side of the inferior maxilla beginning at the posterior edge of the last molar and extending to about the middle of the second bicuspid. It is situated about one-fourth the distance between the two sides of the jaw. The shadow shows a density greater than the bone and almost, if not entirely, as dense as the teeth. It is about ⅜ inch in width and about ⅞ inch in length.

In a lateral view this shadow shows at the anterior end as pointing upward and forward. Therefore, I believe that the calculus (which I feel positive we have to deal with), is situated either in the sub-lingual gland or the duct of Wharton."

February 8, 1915, the patient was operated. An incision was made through the mucous membrane of the left side of the mouth

over Wharton's duct and corresponding to the long axis of the stone. After dissecting with the fingers and a blunt instrument, a large calculus was delivered. The incision was partly closed with two superficial catgut sutures.



The Roentgenogram. Showing location and size of calculus.

The weight of the calculus was 2.73 gm; dimensions were 22-14-8.5 mm.

During the evening of the same day the patient had slight discomfort in the mouth and was disturbed by an accumulation of secretions.

The second day the patient complained of a lump in the mouth and throat which was not painful, only uncomfortable. She did have pain extending around the teeth to the left ear, but only of short duration. There was some reaction present as evidenced by a slight exudate in the mouth in the region of the wound; also a diffuse swelling showed externally under the jaw of the left side.

The third day the patient felt practically no discomfort and the swelling under the jaw was slightly diminished.

Fourth day, a small quantity of exudate was removed from under the tongue; the mucous membrane had begun to assume its natural

color.

Fifth day. The wound looks much better, the diffuse swelling about the jaw has entirely disappeared; however, a slight enlargement of the left submaxillary gland still remains.

Sixth day. Since the swelling in the submaxillary gland had not entirely disappeared it was decided to treat the patient locally with high frequency, twenty minute sittings, three times a week with apparent good results, but not so favorable as I have obtained in other similar cases with this form of treatment.



Photograph of Calculus. Natural size. Viewed edgewise.

ABSTRACTS

Observation. Perhaps no single faculty is so essential to success in the practice of medicine as the power of orderly observation, the capacity for which, inherent in a few, may be developed at will. The brilliant clinician is not always the one who seems to possess an intuitive insight. The ability to observe, systematize one's observations, collate them and recall them at will is in many the result of plodding dogged determination to develop an orderly method of thought that in time results in masterly insight. * * *

One of the best instructors of American medical colleges * * * constantly reiterated the imperative need for orderly observation, insisted that each patient must be analysed from head to feet, always in the same order, and advised his pupils to train themselves in the habit of observation by making it their practice to glance about each room as they entered it, noting the color and pattern of the wall paper, the nature and arrangement of the furniture and pictures, the carpet, windows, lighting—everything that the eye might register, with its proportions and topography—and then to reconstruct it from memory, taking the first opportunity to correct and check the picture; and to do it again and again. It is surprising how rapidly the repetition of this simple method grows into a habit, and how its orderly repetition develops ease and accuracy in clinical study. It soon becomes almost intutive to gather, almost at a glance, the salient features of a case. The labor of systematic study becomes easy, almost automatic. The mind is left free to focus upon the unusual aspects that leap, as it were, into prominence. This method also trains the memory unconsciously so that the effort to recall symptom groups is minimized.

Just as the machinist acquires manual dexterity and precision and muscular co-ordination by the constant repetition of his daily task, so celerity of thought and precision in judgment accrue without conscious effort from the habitual exercise of the habit of observation. * * * On the other hand, failure to employ systematic observation constantly results in slipshod work. Failure to recognize the true nature of disease is as often the result of inattention as of ignorance, and such a slip can never be compensated by frequent brilliant 'snap-

shot' diagnoses. Pardonable blunders are frequent enough without adding to them the humiliating features due to inattention.

The foregoing * * * is in no small measure called forth by a very evident present tendency to throw upon the clinical laboratory the burden of diagnosis. It must never be forgotten that from the time of Hippoorates * * * down to a hundred years ago every gain in medical knowledge was the result of careful, painstaking, *repeated* clinical observation of men who had trained themselves to *see*.—Editorial, L. I. Med. J., Aug. J. L. M.

Formic acid as a polychrest. Dr. John H. Clark sends to the *Hom. Recorder* (August) in a valuable paper upon formic acid three letters from a Mr. Ellison, who reports that the addition to his daily diet of about a grain of formic acid had produced remarkable effects. Among other improvements—"nose, tongue, lips and some other parts greatly reduced in *thickness*. Polypi and fibrous matter absorbed from my nose. Chronic catarrh of nose, throat and intestines practically cured. * * * Facial and bodily appearance so altered that * * * I can converse with people who formerly knew me intimately without my identity being discovered. Eyes, from a light gray, have become of a darker shade. Short sight diminished by 50 per cent." The observer, 31 years old, was diseased from childhood; "the only part of my life free from suffering is the last 12 months. Have been taking, for 2 years and 9 months a teaspoonful after breakfast of

Formic acid (commercial) sp. gr. 1062 (is 25%), 1 part;
Water 11 parts.

added to a drink of a small quantity of water; it has a pleasant, fruity taste. Sometimes I add a little citric acid and sugar." Mr. Ellison believes that formic acid is present in honey, raw juice of the sugar-cane and some fruits, but "owing to having no fixed base, it escapes the observation of the chemist."

Dr. Clark adds that "the place of formic acid in medicine and chemistry is a great and growing one." We have it as tincture of ants—*Formica rufa*—but apis, urtica "and many other plants—among which I suspect, is lemna—contain formic acid."

Ocular disease of dental origin. Dr. Ibershoff reports two more cases serving to justify further the existence of a vicious circle: carious teeth, pyorrhea, disease of the gums and root canals constituting a focus of infection from which emanate certain toxins which

are absorbed and carried by the circulation to the eyeballs. These toxins being albuminous are filtered out by the secretory activities of the ciliary body, and set up an irritative inflammation in the ciliary body, iris and choroid. The uveitis results in the formation of plastic exudates appearing as vitreous opacities, punctate deposits on Descemet's membrane and, occasionally, iris synechiæ.

His observation leads him to believe that ciliary disease is more tractable when it can be traced to infections of the oral cavity—if the co-operation of a good dentist is secured.—*J. of O. O. & L.*, July.

Otitic sinus thrombosis. Examine thoroughly whenever there is the slightest suspicion of any intracranial complication. The mere statement of patient or friends that there is no suppurative trouble is not trustworthy; a purulent disease may exist long after the patient thought it cured. Pressure should always be made in the upper third of the posterior cervical triangle, in the situation of the condylar and deep veins of the neck, pain here is distinctly significant. Pressure pain is usually found earlier over the upper part of the internal jugular vein. Careful inquiry should be made for chilliness and cold extremities, as the patient may not mention them. Disturbed vision is found when the cavernous sinus is involved. In a considerable number of cases optic neuritis is encountered. From the blood stasis there may result: exophthalmos, swelling of forehead, lids and nose, temporary blindness from retinal edema; pressure of the thrombus on the abducens or on the oculo-motor nerve may cause paralysis of the external rectus muscle or internal and external ophthalmoplegia. Libman obtained positive result in nine out of twenty-six blood cultures in cases of sinus thrombosis. He concludes: (1) A positive streptococcus blood culture nearly always points to sinus thrombosis. (2) Continued presence of streptococci in the blood after the sigmoid sinus has been explored may be regarded as an indication for tying the internal jugular vein. (3) If, after that ligation, streptococci are no longer found in the blood, the general invasion has been stopped. (4) In some doubtful cases, where there is evidence only of past aural suppuration and no other focus found from which bacteria could have access to the blood, the discovery of streptococci in the blood would indicate the desirability of exploring the mastoid and sigmoid sinus. Complete noninfectious obstruction is probably a much more frequent complication of ear disease than is usually supposed.

The present trend of surgical opinion, in infectious cases, is in favor of ligating the internal jugular vein in the neck before freely exposing the sigmoid sinus or even before performing the radical mastoid operation, if this has not already been done.—C. F. Pfingsten, *J. of O. & O. L.*, July. J. L. M.

Treatment of glaucoma by sclero-corneal seton. Casey A. Wood obtained favorable results in two cases in which relief had failed from the usual operative measures. He made the eye as aseptic as possible and contracted the pupil with eserin. A narrow Graefe knife, with a hole near its point is introduced just as for anterior sclerotomy. Puncture and counter puncture are entirely in the sclera, as near the clear corneal margin as possible, "so that at least one-half the operative wound communicates with the anterior chamber." When the point emerges one needle of a double-armed white OO braided silk suture, about eight inches long, is passed through the hole in the knife. He found it best to use a half-curved needle just large enough to pass easily through the eye of the knife; it should not be more than two-thirds of an inch long. "Thus armed the knife is then withdrawn so that about the same lengths of double sutures protrude from puncture and counterpuncture. The knife is now freed from the sutures with scissors, and the first needles are with a needle-holder separately passed (by way of the counter-puncture wound) in different directions and for the length of the needle beneath the ocular conjunctiva. The loose ends of suture corresponding to the puncture opening are then threaded and the same maneuver is practiced on that side." The so-called split or patent eye needle is most useful here since a wet sterilized suture can be threaded without the loss of time involved with the ordinary needle. The form of anesthesia is not material, but it is well to employ a mixture of cocain and adrenalin to stanch the bleeding from the scleral wounds. Dr. Wood did not believe that a double thread would irritate more than a single one. *Jour. of O. & O. L.*, July. (*Chicago Ophth. Soc.*, April meeting.) J. L. M.

Excision of endolaryngeal carcinoma. Otto J. Stein anesthetized the larynx by injecting a one per cent novocain solution into both superior laryngeal nerves; the anesthesia was perfect and he worked with absolutely no reflexes. His incision extended up to the hyoid bone, thus avoiding severing the cricoid; this for the healing and it

gave him all the access he wanted to the interior of the larynx.

Joseph C. Beck spoke in favor of this method of anesthesia. He believes that when the diagnosis of endolaryngeal carcinoma is made, the surgeon should be prepared to remove the larynx, because the splitting and laryngo-fissure may produce implantation and secondary carcinoma outside. He and W. L. Ballenger use this method—"blocking"—also with general anesthesia in laryngofissure with total excision.

Charles M. Robertson said: Laryngeal fissure is indicated if the growth is absolutely intrinsic and does not affect the perichondrium; if the perichondrium is affected complete laryngectomy is called for; if glands outside the larynx are affected the disease has gone too far for hope of cure. Do a tracheotomy and keep the patient as comfortable as possible. The resistance must be studied in all cases of carcinoma. He has no faith in Coley's serum, and so far as he could learn the streptococcus serum has not been very successful. You may relieve the reflex by suggestion, he added, but you cannot with cocain. He follows the enucleation by burning with Paquelin cautery right to the cartilage and has never had this develop edema of the epiglottis. Dr. Robertson thinks cancer a disease in the general system before the stimulation of the cell commences, and when we operate upon an absolutely intrinsic throat cancer there may be resistance enough to overcome the condition of the blood so that the disease will be alleviated or arrested. *Jour. O. & O. L.*, July. *(Chicago Lar. & Otol. Soc.*, Oct. meeting.) J. M. L.

Tonsillectomy: The forward inclined sitting position under N_2 0-0 anaesthesia and other new features. I. O. Denman and E. I. McKesson.—*American Journal of Surgery*, May, 1915. Dr. Denman's article is well worth the most thorough consideration of the man who is not yet thoroughly satisfied with his tonsillectomies. It differs from the usual article on the subject in striking a truly new note and in giving a satisfactory experience with a new and well thought-out method. Dr. Denman operates with the patient in a forward-inclined sitting position, with the gas anæsthesia administered through the nostrils. He uses a modified finger dissection followed by the snare, and has found bleeding to be slight, secretions normal during operation; no respiratory troubles from blood or mucus, no delay or interruption in the work, an easy anæsthesia and rapid

recovery.

Those of us who have tried nitrous oxide in tonsil work have often been bothered with the fugescent type of anæsthesia, the constant interruption of the operation, the dangerous cyanosis from the ease with which the patient is too easily "put under," and though this in the majority of cases is due to inexperience in the use of the gas I have seen the same results occur when the inventor of one of our best "mixers" was conducting the anæsthesia. Dr. Denman and Dr. McKesson deserve much credit if they have reached a practical working technique with gas and should be commended for the originality of their method.

As to the outflow of blood from the operative field, which in this case—with the head inclined forward—is said to come out of the mouth, I imagine that in spite of the inclination much blood would follow the fold of the posterior pillar into the laryngo-pharynx; surely it would be hard to get blood from an adenoid curettement to flow out of the mouth unless the patient was put very well forward. However, this latter work is the last operative step and of less danger.

Douglas Macfarlan.

SOCIETIES

To the Editor:

The thirty-fourth annual meeting of the Southern Homoeopathic Medical Association will be held in Cincinnati, Ohio, November 9, 10 and 11, at the Gibson Hotel as headquarters. Cincinnati being a border city, it was thought wise this time to hold the meeting where we might have the help and influence of a great many of the Northern men. A cordial invitation is extended to all readers of the Journal of Opthalmology, Otology and Larynology to be in attendance and make this meeting a great success, propagandistically as well as scientifically.

Yours sincerely,

A. L. Smethers, M. D. President.

J. L. Jennings, M. D. Secretary-Treasurer.

BOOK REVIEWS

Squint: Its Causes, Pathology and Treatment. By Claud Worth, F. R. C. S. Fourth Edition. Philadelphia: P. Blackiston's Son & Co. Cloth, $2.00 net.

Worth's book is a classic in ophthalmology. It is the one book we recommend to beginning students to cover the subject of squint. To those of us who are acquainted with the first three editions there is nothing new in the book except what Worth calls attention to in his preface to this fourth edition.

To Worth must be given the credit of isolating a well defined group of cases known as "neuropathic diversions" and from his observations giving this condition a better prognosis. A marked change in Worth's attitude toward his former opinion of tenotomies was noticed. The fusion faculty is still the cause of squint. The amblyoscope is the cure. Worth does not give much credit to prism exercises, as we do here in America. F. O. N.

Swanzy's Handbook of the Diseases of the Eye and Their Treatment. Edited by Louis Werner, M. B., F. R. C. S., Sen. Mod. Univ. Dub. Eleventh Edition, with illustrations. Philadelphia: P. Blackiston's Son & Co., 1915. Cloth. Price, $4.00.

That this book should have appeared in its eleventh edition is proof of the demand for it. This edition has been brought up to date. There is nothing new that is not contained in it. The 21 colored plates are both excellent and accurate. The value of the work is not to be judged by its size or its code. It is a book for both student and physician. G. W. M.

Electricity in Diseases of the Eye, Ear, Nose and Throat. By W. Franklin Coleman, M. D., M. R. C. S., Eng. With 595 pages and 856 illustrations. Price, $5.00.

Your attention is called to Dr. W. Franklin Coleman's recently published book. The author handles the subject of electro-therapy so scientifically and yet so practically that no one can fail to appreciate its wonderful remedial powers. He writes clearly and forcibly and his knowledge of electro-therapy in this special field is both extensive and thorough.

The book will be read with a great deal of interest and satisfaction by specialists who contemplate using this potent factor, as well as by the men who are already getting high-class results from electro-therapeutics, and all specialists in eye, ear, nose and throat work will find the book valuable in suggesting various successful methods for the use of electricity in their practice. McC.

NEWS ITEMS

Dr. Edward Pynchon died of uremia at his home in Chicago August 28th, after a brief illness. He was in his sixty-second year.

Dr. Pynchon was a professor of rhinology, laryngology and otology in the Chicago Eye, Ear, Nose and Throat College. He was one of the collaborators of *The Laryngoscope* and a frequent contributor to oto-laryngological literature. His death is a distinct loss to the profession.

Dr. Irving Townsend will resume his regular office hours at 150 West 59th Street, New York, after September 6th.

Dr. Douglas Macfarlan has returned to his office at 1805 Chestnut Street, Philadelphia, after a trip to the White Mountains.

A large eye, ear, nose and throat practice for sale in Philadelphia. Inquire of Dr. Frederic W. Messerve, Perry Building, Philadelphia.

Dr. Gilbert J. Palen presented a paper at the Pennsylvania Homoeopathic State Society at the last meeting, subject, "Focal Infections."

Dr. George W. Mackenzie presented a paper on "Acute Secretory Catarrh of the Middle Ear."

Other papers were presented by Dr. G. J. Alexander, Dr. J. V. F. Clay, and Dr. Percy Tindall.

Dr. Royal S. Copeland, dean of the New York College, delivered an excellent address before an appreciative audience at the banquet held by the Pennsylvania Homoeopathic State Medical Society at its annual meeting in September.

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CONTENTS FOR NOVEMBER, 1915

EDITORIALS

Page

The Future of Post-Graduate Ophthalmic Teaching in America.. 895
"Nasal Props and the Incapable Nose"..... 896
Constructive Work in the Management of the Institute..... 897
Announcement 898
Transactions of the Twenty-eighth Annual Meeting of the American Homoeopathic Ophthalmological, Otological and Laryngological Society 899

ORIGINAL CONTRIBUTIONS

Glioma of the Retina with Report of a Case. By J. E. Sternberg, M. D..... 922
Value of Proper Care of Eyes During Childhood and Adolescence. By R. G. Reed, M. D..... 930
The Smith-Indian Intracapsular Operation for Cataract, and the Results Obtained by It. By J. J. Smith, M. D..... 935
The Intracapsular Operation for Cataract: A Surgical Advance. By H. A. Watts, M. D..... 944
A Simplified Operation for Making an Artificial Pupil in Seclusio Pupillae. By Philip Rice, M. D..... 950
The Value of Occlusive Bandage in Corneal Affections. By Charles Leslie Rumsey, M. D..... 952
Occupational Diseases of the Eye. By W. M. Hillegas, M. D..... 954
Sinus Roentgenography. By H. M. Beebe, M. D..... 962
Some Observations on Ophthalmic Teaching. By I. D. Metzger, M. D..... 965
Discussion of "Clinical Value of Labyrinth Tests." By G. W. Mackenzie 971
ABSTRACT 974
SOCIETIES 975
NEWS ITEMS 977

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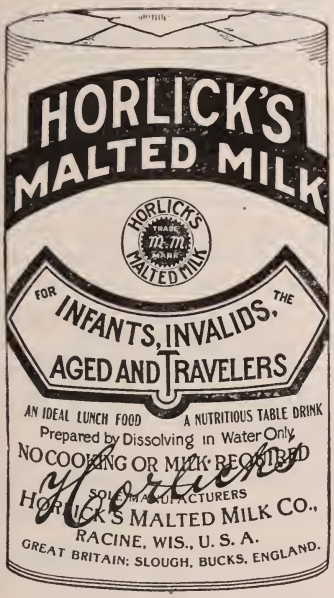
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Vol. XXI. NOVEMBER No. 11

EDITORIAL

THE FUTURE OF POST-GRADUATE OPHTHALMIC TEACHING IN AMERICA

In a well prepared article that appeared in the August number of *American Medicine* Dr. Wendell Reber calls attention to this important subject—the future of post-graduate ophthalmic teaching in America. The article is well worth reading by all ophthalmologists.

The subject is a timely one, especially in view of the fact that the post-graduate schools in Europe are closed on account of the war. Just how long they will remain closed is a question difficult to answer. Formerly Europe was a veritable Mecca for American physicians, and it might be added that Americans comprised the major portion of the student body. If it had not been for the American students and the fat fees they were paying for special courses it is doubtful if many of the private courses could have survived. When we stop to think it will be readily appreciated that the students make the teacher as much as the teacher makes the student. One is essential to the other.

Since America supplies a large proportion of the total number of students seeking post-graduate instruction in medicine, it would seem a waste of time to postpone longer the attempt to get together and establish schools for the purpose. Before anything is done it would be well to consider the question from every angle. After a satisfactory plan has been adopted it would be well to have it approved by the various recognized bodies, after which the schools could be consistently patronized.

As a suggestion we offer the following:

(a) That committees be appointed by all national societies devoted to the subjects of ophthalmology, otology and laryngology to meet in joint session to consider the question of post-graduate schools in America, not excluding Canada and possibly Mexico.

(b) That after the committees have met, discussed and finally agreed upon the best possible working plan, they report back to their respective societies for their concurrence.

(c) Perhaps a still better plan would be to have all the national societies hold a joint meeting somewhere centrally located for the final adoption of the committees' report—perhaps with amendments.

(d) After the adoption of the best plan the next move would be for a united effort on the part of all the organizations to raise the necessary funds to launch the project, either by subscriptions within the organizations or without.

It would hardly be expected that the American schools would in the beginning excel or even equal the standard of those in Europe, but in time no doubt they would, and it would not take a long time at that. Americans when they once start to do things usually do them right; so let it be so with this urgent problem.

"NASAL PROPS AND AN OPERATION FOR THE INCAPABLE NOSE"

An article appears under the above title in the September *Medical Review of Reviews*, written by Owen Paget, M. D., Kent, England. (Rather an indefinite address.)

We confess surprise that space should have been spared in this valuable journal for a paper of this caliber. About three-quarters of a century ago American periodicals seemed to think that anything from England was worth publishing; that is not the case today, as a general rule.

Dr. Paget writes: "Incapacity to breathe through the nose is almost entirely due to either carelessness or to a feebleness of the muscular and cartilaginous structures of the 'aloe nasi' (so spelled constantly—a repeated typographical error?), which leads to their collapse. Deviations and outgrowths from the septum play in reality an insignificant part, hence it is possible by means of nasal props, which I myself have worn for two years, or by a simple operation, to convert almost anyone into a nose breather.

"Mere mention will be made of the fact that the proper method of treating ethmoiditis and sinusitis is by establishing a free but not too still a current of air through the nose. The operation to be described has been used successfully for this purpose.

"If a person normally breathes through the nose he is constantly immunizing himself against disease, especially respiratory. Further, if he already has the disease, he can still further cure himself by breathing through the nose; provided he inspires the specific microbe and that it becomes deposited on the turbinates or in the sinuses." * * * "It follows from all this" (i. e., in pneumonia, adenoids and in old people with collapsed nostrils, "persistent efforts are made to breathe through the nose, as witness the muscular efforts to dilate the aloe nasi") "that if with a tubercular patient easy breathing can be established through the nose, and that tubercle bacilli in the form of snuff* are applied to the mucous membrane of the turbinates and sinuses, there is a strong probability of the disease being cured."

The "props" are curved wires worn within the nares. The operation is a crescentic skin excision about an eighth of an inch each side of the nose united by three sutures; "the object to be achieved is to produce a similar result to pulling with a blunt hook, each nostril gently downward, outward and a little backward, which enables the patient to breathe through the nose easily, thus immunizing him against influenza, tuberculosis and catarrhal pharyngitis; in fact, all the diseases to which the mouth breather is liable."

It would be interesting to know where and when Dr. Paget obtained his agree of M. D. J. L. M.

*A simple method of preparing a snuff containing tubercle bacilli is to sterilize and dry the sputum of a patient suffering from pulmonary tuberculosis.

CONSTRUCTIVE WORK IN THE MANAGEMENT OF THE INSTITUTE

Your attention is called to the editorial on this subject in the September *Journal of the American Institute of Homocopathy*.

The plan should be carefully studied by all interested before taking final action in that body. Abstracting from the editorial we quote:

"The proposed plan of giving executive authority to a small board of control is practically what is done now by the president in council with the chairman of the finance committee and the chairman of the Journal committee, the two most important committees of the board

of trustees. The weakness of the present plan is that the tenure of responsibility is too short to carry out any well defined plan of activity. The fundamental principle of the new proposition is the principle of commission form of government, a small executive body, continuance of responsibility proportionate to efficiency of service, and a free hand so long as the results are satisfactory to the power-bestowing body.

"The department of correspondence is open to comment and suggestion, limited only by the usual rules of good journalism, space limitation and tolerance for the other man's opinion."—(Signed) S. M. H., Ed. J. A. I. H.

ANNOUNCEMENT

Dr. George B. Rice will be the associate editor of the December number of the JOURNAL. Dr. Rice needs no introduction to our readers. He served the O. O. & L. Society as its president in 1903. He was one of the first to remove tonsils by the finger method, which he skillfully demonstrated at one of our society meetings several years ago. His clinics have been enjoyed by those who have witnessed them, particularly the one held in Boston a few years ago where, among other things, he performed a successful and expeditious operation on the larynx for the removal of a tumor. He has been a liberal supporter of the JOURNAL, and his services as associate editor will be much appreciated at this time.

TRANSACTIONS OF THE TWENTY-EIGHTH ANNUAL MEETING OF THE AMERICAN HOMOEOPATHIC OPHTHALMOLOGICAL, OTOLOGICAL AND LARYNGOLOGICAL SOCIETY

HOTEL SHERMAN, CHICAGO, ILL., JUNE 29, 30, JULY 1, 2, 1915.

MEETING called to order by the president, Dean W. Myers, at 10:00 a. m. It was moved by D. A. MacLachlan, seconded by W. H. Phillips, that the program as printed be adopted as the order of business, with the exception that papers whose authors are absent be read by title until the end of program, when they could be read at the pleasure of those in attendance. Carried.

The president then appointed the following committees:

(a) Attendance—J. R. McCleary, W. W. Williams, J. B. S. King.

(b) Nominations—The ex-presidents in attendance.

(c) Press—J. R. McCleary, G. M. McBean, Burton Haseltine.

The next order of business was the president's address; the second vice-president, F. C. Sage, took the chair during its reading.

Philip Rice, W. H. Phillips, Burton Haseltine and J. R. McCleary were appointed as a committee on the president's address.

Burton Haseltine asked permission to make an announcement, which was that owing to the extensive arrangements made by the local committee for the entertainment of the Institute, to all the features of which the members of the O. O. and L. Society were welcome, they had made no special arrangements for the entertainment of this Society as a separate organization. There were two clinical features, however, for us alone. At the new Cook County Hospital, the newest and most modern of hospitals, there would be two clinics at 2 p. m. on Friday, one held by Joseph Beck, on the ear, nose and throat, and one by E. V. L. Brown, on the eye. Dr. Beck's clinic will be mostly surgical. Dr. Brown has made some very interesting studies of the relation of general medicine to the diseases of the eye in the matter of diagnosis and treatment. Early on Friday morning, about 8:30, there will be two features of interest at the Hahnemann Hospital; Dr. Myers, our president, will do a cataract extraction according to

the Myers technique and Dr. Tenney will demonstrate the Tenney method of intraspinal administration of neosalvarsan in a case, or in some cases of nervous deafness of syphilitic origin.

The president then spoke of promptness in beginning the different sessions and urged members to be present at the announced hour.

F. C. Sage, second vice-president, then took the chair.

Paper No. 2. A Simplified Operation for Making an Artificial Pupil; by Philip Rice, of San Francisco, Cal.

Discussion by G. A. Suffa, W. H. Phillips, G. W. Mackenzie and F. C. Sage.

As the authors of Papers No. 1 and 3 were absent, the secretary suggested that a communication that had been received from the ophthalmic section of the American Medical Association be read. No objections being offered it was read by Dr. I. O. Denman.

DISCUSSION

Vice-president: This seems a very timely subject to me and right in line with the president's address. It seems to me that we should take some action upon it. What is your pleasure about it?

G. A. Suffa: It was sent to me and I received it just before I left Boston. We are in sympathy with that movement and as we are a national body we should be represented in it.

Burton Haseltine: Was that report sent to the secretary as an officer of this society, or was it sent to private individuals only?

G. A. Suffa: No, it was sent to me as a private individual only.

Burton Haseltine: My question was, did the secretary of this society receive it in his official capacity?

I. O. Denman: The secretary did not receive anything?

Burton Haseltine: Then this society has received no official notice and in view of the fact that we were the pioneers of this very movement of outlining a proper course of study for our specialists, one that was adopted and published in our transactions, I do not think that we should take any notice of this report until it is officially sent to the officers of our society. We have gone on record in this matter and taken the first steps ever taken by any society in that direction and I think that we should have credit for it. Therefore I move that the president and secretary of this society be instructed to communicate with this committee and use their best efforts to obtain recognition and the privilege of co-operating with them.

Seconded by G. A. Suffa.

Vice-president: Is there any discussion? I happen to know something about the discussion when this matter was brought up in their meeting. It was their attitude to give recognition to all societies of the character of this one and to co-operate.

Phillip Rice: How long ago was this resolution made? Was it at a recent meeting?

G. A. Suffa: My impression is that it was made in the eye section two years ago.

Burton Haseltine: This society's recommendations upon this matter of education were gotten out in a special pamphlet which embodied our ideas upon the subject. I have some of them and can supply them.

G. A. Suffa: Would your resolution put the work upon the present officers or those of next year?

Burton Haseltine: I think that it should be the duty of the incoming officers. Carried. Adjourned.

Second Session, Tuesday, June 29th, 2 P. M.

Meeting called to order by the vice-president, F. C. Sage.

Paper No. 6. A Case of Soft Cataract: Extraction of the Capsule; by G. N. Seidlitz.

Discussion by C. G. Fellows, G. A. Suffa, G. N. Seidlitz, I. D. Metzger, R. A. Copeland and J. A. Campbell.

Paper No. 7. Some Observations on Ophthalmic Teaching; by I. D. Metzger.

Discussion by R. A. Copeland, G. A. Suffa, J. A. Campbell, N. Bentley, A. C. Clapp and C. G. Fellows.

Paper No. 10. The treatment of Keratitis and its Sequelae by High Frequency Current; by W. E. Boynton, Chicago, Ill.

Discussion by E. D. George, W. M. Muncy, J. A. Campbell, J. R. McCleary, A. A. Eikenberry, G. D. Arndt and W. E. Boynton.

Vice-president: It has been suggested that owing to the early hour, there being no more papers whose authors are in attendance here, that we go on with some of the evening papers.

C. G. Fellows: I suggest—no, I move—that if the gentlemen interested are willing that they be requested to give their evening papers now. Seconded. Carried.

Paper No. 11. Wood Alcohol Amblyopia; by J. A. Campbell,

St. Louis.

Discussion by C. G. Fellows, E. J. George, N. Bentley, G. D. Arndt, W. O. Bell and J. A. Campbell.

Paper No. 12. Value of Proper Care of the Eyes during Childhood and Adolescence; by R. G. Reed, Cincinnati.

Discussion by W. E. Boynton, J. A. Campbell, C. G. Fellows, G. D. Arndt, F. C. Sage and R. G. Reed.

Paper No. 14. Demonstration of the Ophthalmotrope; by G. A. Suffa, Boston.

Discussion by G. W. Mackenzie, R. G. Reed and E. J. George.

Paper No. 13. Oral Endoscopy; by C. C. Collier, Chicago, Ill.

Discussion by N. Bentley and W. H. Phillips.

Adjourned.

All the papers of the third session having been read at the second, the third session was omitted to allow members to go to the entertainments.

Fourth Session, Wednesday, June 30th, 10:00 A. M.

Called to order by the president.

President: Before proceeding with the papers there is a little matter of business to be attended to. Last year Dr. Neil Bentley filed his application for membership, complying with all the requirements of membership, but owing to some oversight his name did not appear in the published transactions. When the matter was called to my attention I looked it up and found that the application was in regular form and that the fee of five dollars had been paid. In order to correct this, there should be a vote to make him a member as of last year. I shall be glad to entertain such a motion.

G. A. Suffa: I move that Dr. Bentley be declared a member, his membership dating from the meeting one year ago. Seconded. Carried.

F. C. Sage: I would call the attention of the society to the fact that there are none of the board of censors attending this meeting.

President: That is true; I will appoint W. H. Phillips, G. A. Suffa and C. E. Allen to act as censors.

Paper No. 15. A Rare Case of Cerebellar Abscess with Presentation of the Patient; by Burton Haseltine, Chicago, Ill.

Discussion by Julius Grinker, D. W. Myers, Geo. W. Mackenzie, W. H. Phillips, J. A. Campbell and Burton Haseltine.

Adjourned.

Fifth Session, Wednesday, June 30th, 2 P. M.

Paper No. 18. Head Hemorrhages; by F. C. Sage, Waterloo, Iowa.

Discussion by G. W. Mackenzie, W. M. Muncy, A. A. Eikenberry, A. Lewy, E. G. Linn and F. C. Sage.

Paper No. 19. The Clinical Value of Labyrinth Tests; by George W. Mackenzie, Philadelphia, Pa.

Discussion by A. Lewy, W. M. Muncy, Julius Grinker and G. W. Mackenzie.

Paper No. 23. Sinus Roentgenography; by H. M. Beebe, Ann Arbor, Mich.

Discussion by G. W. Mackenzie, W. H. Phillips and H. M. Beebe.

Paper No. 24. The Relation of Nasal Diseases to Headache; by E. Jones, Boston, Mass.

Discussion by A. A. Eikenberry, I. O. Denman and E. Jones.

Sixth Session, June 30th, 8 P. M.

Paper No. 26. The Comparative Anatomy of the Eye with Lantern Demonstrations; by T. M. Stewart, Cincinnati, O.

There was no discussion, but after the lecture Dr. F. C. Sage moved that the thanks of those present be tendered Dr. Stewart for his interesting lecture. Seconded. Unanimously passed.

Seventh Session, July 1, 1915, 10:00 A. M.

Meeting called to order by the president at 10:00 A. M.

President: There is an error or two in the program, one or two of which I would like to correct. The title of Paper No. 33 should be "Fusion, an Important Factor in Ocular Efficiency," by G. A. Shepard.

The title of Paper No. 13 was corrected yesterday.

Reports of Officers.

(a) Report of Secretary, I. O. Denman.

REPORT OF THE SECRETARY.

The Secretary, in presenting a brief report, wishes to say early therein that the somewhat arduous duties of the office and especially to one unfamiliar with the details thereof, have been materially lessened and the rough path smoothed by the generous support and counsel of the retiring Secretary, our now honored President, Dr. Dean W. Myers.

The program, which we believe you will find up to the usual stand-

ard, was arranged without designating discussants, with a few exceptions. There was no motive in this other than that there is an unusual array of papers and prearranged discussion of each paper might unduly lengthen the sessions.

The Transactions were not issued this year in the usual manner. This subject was discussed at the last annual meeting at Atlantic City, but was not disposed of and during the year, as you know, the official Journal was transferred to a new management, which employed a new publisher; so a part of the volume was issued from one publisher and the remainder from another. When bids were requested, we found by reason of this condition and some of the type having been destroyed, that the figure named was nearly $2.00 per volume. The Secretary therefore, after consulting with the President, closed a contract for binders for the Journal at forty-two (42) cents each. These have been mailed to the members.

Respectfully submitted,

Ira O. Denman, Secretary.

F. C. Sage moved that the report be accepted and placed on file. Seconded. Carried.

(b) Report of Treasurer, W. M. Muncy.

TREASURER'S REPORT.

Receipts.

Reported balance on hand, Atlantic City, N. J., June, 1914	$532.15
Received from initiation and dues	320.00
Received from Dr. F. C. Sage for printing	1.25
Interest on deposit in R. I. Hospital Trust Co	4.85
	$858.25

Expenditures.

Paid Geo. C. Felker, painting of signs	$ 6.00
Dean W. Myers, expenses of Secretary	61.30
A. W. Palmer, Journal of O. O. & L.	39.99
J. B. S. King, on account of services	75.00
J. Ivimesy Dowling, expenses of President	25.00
J. B. S. King, on account of services, balance of bill	25.00

University Press, storage on drug provings	2.50	
Examiner Printing House, express on transactions	3.72	
Chester P. Childs, accountant, examination of books of Journal	90.00	
Examiner Printing House, pamphlets of active members	5.50	
Edward Jones Sons, Printers, bills and envelopes	10.05	
University Press, insurance on drug provings	7.50	
		$351.56
Balance on hand June 26 at R. I. Hospital Trust Co., Providence, R. I		$506.69

ASSETS.

Cash on hand	$506.69	
Dues in arrears	462.00	
Total		$968.69

LIABILITIES.

Expense of Treasurer, postage and ledger cards	$ 7.48	
Expense of Secretary	74.40	
Expense of President	28.00	
Bill of official stenographer	100.00	
Expense of local committee and programs	20.00	
Binders for transactions	105.00	
Total		$334.88
Assets over liabilities		$633.81
Total membership		198
Number of new members		12
Number resigned		0
Deaths reported		2

Respectfully submitted,

WM. M. MUNCY, *Treasurer.*

The above reported as correct.

G. A. SUFFA,

G. G. TOWSLEY,

Auditors.

The president appointed G. A. Suffa, A. Sowers and G. G. Towsley as Auditing Committee.

(c) Report of Necrologist.

Owing to the necrologist being unaware of his appointment, the report was deferred until the next meeting. The following resolutions in regard to the death of A. Worrall Palmer, former editor of the official journal of the society, were presented:

Whereas, It has come to the notice of the American Homoeopathic Ophthalmological, Otological and Laryngological Society that the grim reaper has taken from our midst our beloved fellow member, A. Worrall Palmer, and

Whereas, He for many years was the editor of our official journal and of inestimable value to us,

Therefore, be it Resolved, That the American Homoeopathic, Ophthalmological, Otological and Laryngological Society, in annual session assembled, extend to the members of the deceased's family our sincere sympathy in their hour of sorrow and that this resolution be spread upon the records of the society.

Be it Further Resolved, That a proper and fitting memorial essay be written and published in the official journal of the society.

Seconded by G. A. Suffa. Carried.

President: It is difficult for the necrologist to get early notice of the deaths that occur. I wish each member, as soon as he dies, would send an account of it to the necrologist; at least each member should send notice of the deaths of any members which he hears or knows of.

R. H. Street: I suggest that the editor of the Journal be elected necrologist; he is the one most likely to hear of deaths and could publish them in each number of the Journal.

G. W. Mackenzie: I carry a full line of dead stuff already.

Report of the Board of Censors.

W. H. Phillips: We have quite a number of applications. Only one of the whole lot has complied with all the requirements. W. J. Blackburn has done this and is recommended for election.

W. J. Blackburn was accordingly elected by ballot of the secretary for the whole society.

The following names have applied, but are all in some respect or

another lacking of the requirements:

W. O. Bell, Seattle, Wash.

C. S. Simpson, Carnegie, Pa.

R. C. Cooper, Pittsburgh, Pa.

Douglas MacFarlan, Philadelphia, Pa.

Judson A. Ferree, Columbus, Ohio.

H. A. Watts, Malden, Mass.

It was recommended that these applications be referred to the secretary, with the request that the rules and regulations be complied with, and then sent back to the Board of Censors.

Report accepted.

President: The requirements are: Amendment to Article V of the by-laws, Section 1.

Any reputable physician may be elected to membership in this society who shall have fulfilled one of the following requirements or other qualifications judged by the Board of Censors to be an equivalent.

(a) Not less than one year of service subsequent to graduation as an interne in a reputable hospital or infirmary devoted to the treatment of diseases of the eye, ear, nose and throat.

(b) Not less than six months of post-graduate study in these specialties in a reputable teaching institution.

(c) Not less than one year of association in private practice with a reputable practitioner of these specialties. The candidate shall have the endorsement of two reputable physicians from the locality in which he resides.

(d) Not less than three years of independent practice in one or more of these specialties, and the submission of a report of fifty consecutive medical or surgical cases which shall include histories, treatment and final results. These reports are to be subject to the approval of the Board of Censors.

(e) Evidence of original investigation of a worthy character upon a subject related to these specialties. This material is to be presented in a form suitable for publication by the society in its transactions.

(f) In addition to one of the above each candidate shall be required to submit a paper on some subject relating to his specialty to the board of censors and, if accepted by the Board, shall be read before the society by the candidate at the next meeting.

The candidates this year probably were unacquainted with these

by-laws. When soliciting new members we should place a copy of these requirements in the hands of each long enough before the meeting so that they may have time to properly prepare.

G. W. Mackenzie: In regard to these gentlemen who have applied, it might be as well to modify our rules for them to this extent, to elect them subject to their sending a satisfactory thesis to the censors during the next few months.

President: They would have to be mailed to the different members of the Board of Censors, who live, in some cases, far apart, because the theses have to be approved by the members of the board.

G. W. Mackenzie: I simply suggest that that could be done in these instances, because the requirements are new, and may not have been known. I think that our rules should be so elastic as to permit them to come in now subject to the proviso I suggested.

W. H. Muncy: I have two applications here with the money; am I to send them a receipt for it, although the theses have not been sent?

G. Mackenzie: Just hold the money for the present; it can be returned if they are finally denied membership.

W. H. Phillips: I do not favor the proposition of referring the date of membership back to last year. If you are making an effort to raise the standard of the society higher it would be well not to make too many concessions. I think that it would be well to allow these members to lay over a year until all the requirements can be complied with. If we elect them now with a proviso and the proviso is not complied with we have to reject them later.

F. C. Sage: If it is left over for a year it will be quite a task for the censors to look over all the theses and critically examine them. It is not the intent of the society to keep anybody out who is eligible. We all want to increase our numbers. The idea of the thesis is simply to keep out incompetent members. I see no reason why these should not be elected provisionally. I would like the ruling of the president on that proposition.

D. W. Myers: My ruling would be that they send the theses, etc., to the present Board of Censors within three months from date. This is so that the incoming board may not be loaded down with this year's business. All such would become members at the next meeting.

Burton Haseltine: That would contemplate that they do not become members until the next meeting. The only difficulty about

that is that the present Board of Censors would have to examine the theses and approve of them or reject them and they would have to be sent about by mail. The censors live too far apart to expect them to get together.

G. A. Suffa: That is but a little difficulty; they can read them and act upon them individually and send them on their verdict to the secretary.

F. C. Sage: Remember that there is not one of the Board of Censors here at this meeting and that they will be unacquainted with the details of the question. Would it not be better for the incoming board to act upon the papers, sent to each one by mail.

President: Each applicant could be requested to send his thesis to the secretary within three months and he could see that the censors got copies. I will also keep in touch with the applicants. Of course the five dollar fee must accompany the thesis. If these requirements are not complied with they will have to apply again next year.

Moved and seconded that those applicants who have not complied with all the requirements be referred back to the secretary for completion of the requirements, he to send the data to the members of the Board of Censors.

President: If this is passed it will practically be the same as my ruling. Carried.

Election of Officers.

The Election Committee consisted of C. G. Fellows, Royal G. Copeland, G. A. Suffa and Burton Haseltine. The following ticket was offered:

President—W. H. Phillips, Cleveland, Ohio.

First Vice-President—A. E. Cross, Worcester, Mass.

Second Vice-President—Harold A. Foster, New York.

Secretary—I. O. Denman, Toledo, Ohio.

Treasurer—W. M. Muncy, Providence, R. I.

Board of Censors—G. W. Mackenzie, Philadelphia, Pa.; F. C. Sage, Waterloo, Iowa; Alfred Lewy, Chicago, Ill.; G. D. Arndt, Mt. Vernon, Ohio; C. E. Allen, Kansas City, Mo.

G. A. Suffa moved that the Secretary be instructed to cast the ballot of the society for the officers in the ticket. Seconded. Carried.

G. W. Mackenzie was nominated for the position of necrologist.

It was moved that the Secretary be instructed to cast the ballot

of the society for Dr. Mackenzie as necrologist. Seconded. Carried.

Burton Haseltine announced that the eye, ear, nose and throat clinic by Dr. Joseph Beck would not be held, as announced, at the Cook County Hospital, but at the North Chicago Hospital, No. 2551 North Clark Street, instead.

Report of Committee on Attendance.

Dr. Williams reported:

Average attendance, 34.

Largest attendance, 75.

Smallest attendance, 23.

Visitors, 24.

Report on Press.

No report, the matter being attended to by the Institute Committee.

Report on President's Address.

report of committee on president's address.

It is with more than ordinary satisfaction that your Committee has considered the very excellent address of our President, and with more than a perfunctory spirit endorses the recommendations he has so ably presented.

The keynote which is struck is in splendid accord with the keynote of all modern science, and can be epitomized in the one word "Advancement."

The strong plea made for improvement in post-graduate training in America must surely meet with the hearty endorsement of all open-minded and active physicians; all of whose mind and soul yearn for something more than a mere existence, for something more than a mere repetition of the deeds of those who have gone before, noble as may have been their achievements.

The suggestion made by our President for accumulating a fund for the purpose of endowing an institution, devoting its full time to training men for our special work, meets the approval of your Committee; but if it was in the mind of President Myers to recommend the founding of a new institution, then it is the opinion of the Committee that it would seem to be the part of wisdom to use such funds for the purpose of improving our school, which is already established, and has an enviable record, making a consistent effort to bring about a closer relation between this institution and the members of our society.

It cannot be reasonably asserted that those in control of our post-

graduate school in New York are not imbued with the same spirit of progress which animates those in control of all worthy institutions of learning today. Actively expressed loyalty and substantial support from members of this society and influential and wealthy patrons of our school of medicine would greatly facilitate in the work attempted in the New York Ophthalmic, as well as aid in displacing whatever there may be that savors of the out-worn and decrepit. This college must be considered as peculiarly our own. Improvements have been made, others are under contemplation, and possibly others could be demanded were we in a position to meet the added expense which would necessarily be incurred by them.

Added instruction, a raised standard of education, would make a consideration of the question referred to by our President, of conferring a degree or fellowship reasonable, and in keeping with the practice of other institutions of learning in this and in other lands.

The Committee endorses the President's opinion regarding the newly organized Journal. We recommend that the Journal be continued as the official organ of the O. O. and L. Society, and that a fund not to exceed two hundred dollars ($200.00) be appropriated for the ensuing year to pay for the material published by the Journal for the society. We suggest that the details of this expenditure and manner of publication be left to the newly elected President and Secretary in conference with the Journal manager.

Loyalty to our cause and devotion to duty marks the administration of President Myers, and with heartiness does this Committee express to him its thanks; and in so doing believes it expresses the feelings of every member of the society.

Respectfully submitted,

Philip Rice, Chairman.
Wm. H. Phillips,
Burton Haseltine,
Committee.

J. R. McCleary moved that the report be accepted and spread on the records.

W. H. Phillips: I think that the recommendations should be adopted. I move an amendment that the report of the Committee on President's Address be accepted and its recommendations adopted.

J. R. McCleary accepted the amendment. Seconded. Carried.

President: I want to thank the committee for its kind treatment of my address. The institution I had in mind while writing that address was the New York Ophthalmic. I would like to see our society get back of that institution and support it. I will put my name down for $500.00.

Burton Haseltine: I will be second man on that list for $500.00, provided this society can have something to say about the expenditure thereof.

President: That would be understood. If this society was back of the institution in a substantial way some recognition of it would follow.

W. H. Phillips: With that understanding I would be third on the list. That is, that this society would have something to say about the management of the institution. I would not agree to do it unless that was specifically understood.

President: It should be clearly stated at the time of making the offer that this society should have the right to elect a member or members on the board of managers.

J. R. McCleary: It pleases me to see the loyalty of the men who are inclined to assist the old New York College. I have been exceedingly sorry to observe that the institution is not keeping up to date: its faculty does not seem to show the spirit of getting together and pushing to the front. I want to join this work and will put my name down for $500.00.

S. B. Moon: You may put me down for $500.00.

Burton Haseltine: There is no doubt but that the support of this society would result in a great improvement, and it could be done if they would meet us half way or even quarter way. We have boosted it in times past and done good work for it, but we have not been met with much cordiality. I believe that there is not a single representative of that institution present at this meeting.

F. C. Sage: I should hate to see good money thrown away and if the New York Ophthalmic is not going to meet us half way, why not put our money in some other school? Let us build up a school such as we want.

President: What would you do for $50,000, Dr. Mackenzie?

G. W. Mackenzie: I would do most anything you want.

President: I would like to see this matter taken up by a competent committee to secure subscriptions and also to see to it that proper terms are secured.

G. W. Mackenzie: I move that a committee of five be appointed to look up the matter.

I. O. Denman: Why not go at it in a business-like manner. Make it a stock company and give stock to each subscriber for his subscription. A board of trustees or managers could be appointed.

J. R. McCleary: I move that such a committee be appointed not only to investigate the possibilities of the movement, but also to indicate the best way of proceeding. Probably Dr. Haseltine has had the most experience and could present us with the best plan of procedure. Seconded. Carried.

President: I appoint Dr. Phillips as chairman and secretary ex-officio to take this matter up with the institution spoken of, and with Philadelphia and Chicago institutions, and to find out what can be done and the best manner of doing it. All in favor of this please stand up. All stood up.

Meeting adjourned.

PRESIDENT'S ADDRESS

Fellow Members of the American Homoeopathic Ophthalmological, Otological and Laryngological Society: It is with mingled feelings of pleasure and regret that I arise upon this occasion to read to you this feeble effort, entitled a Presidential Address. It is with pleasure, because I know the time will soon be over and doubtless the most of you will survive the ordeal. It is with regret, because it marks another epoch in the history of our society and places me in the ranks of the gray-haired and bald-headed "has-beens." However, there is some compensation, for when we have been successfully laid upon the professional shelf some of us can still play golf.

In looking over addresses of former Presidents of this society, I find that my effort would not be complete were I not to say that "I wish to express my heart-felt appreciation for the honor you have conferred in electing me to this, the highest office in your gift." I trust I have shown my appreciation and that I need not comment further upon that subject. I do wish, however, to express hearty

appreciation for the co-operation of the other officers of this society and for various of its members who have aided materially in preparing the successful program which we are about to listen to in the coming days. It is such hearty co-operation and such enthusiastic fellowship that is to make our society a success in the future and keep it in the ranks of the very best this world affords. There are many men whom I ought to name for their careful, painstaking and unselfish sacrifice to the good of this institution. I am sure I did not realize there were so many in our society who are willing to give of their time and means freely and without question for the good of our cause. It is to such as these that we are to look in the future for our growth. It is such as these who are to keep our society in the front ranks.

An unusual development of circumstances throughout the entire world has laid at our very doors opportunities which will not come to the American physician in many years again. For years we have looked to other countries for our standards in the arts and sciences. Almost with the whirlwind devastation of a cyclone, war has burst upon these nations and ere its end is seen, will have strewn upon the ground a mass of wreck and ruin, all the beauty and the good they have been building these many centuries. America's great opportunity is here. Shall we show the way to peace, happiness and prosperity? Shall we take up the burden of our broken brothers and carry on the scientific work they have so nobly aspired? I should like to see this society take definite action at this meeting looking to the establishment of a great teaching institution in our line of work having scientific research in all the various branches of our specialty going on at all times and in which the best of specialists would be trained for the future. As has been discussed in this society many times before, we have already the ground work for such an institution, we have the men competent to carry on such work, all we lack is the properly equipped institution. To secure such an institution there must be funds. No scientific work can be done without strong financial backing. If we, as a society, would come forward, unite solidly as a unit, and put our shoulders to the wheel, we could soon have one of the strongest institutions in the world. As I have said, what is needed is money, and the more the better. If one hundred of our men would give five hundred dollars each, a fund of

fifty thousand dollars would be established at once. And many of our men through their clientele could secure many times that sum. With the aid of this sum an institution could be placed upon a solid working foundation. I believe the time is ripe for us to get together as a body and develop this thing with most hearty zeal. I know that we are nowadays contributing to almost everything, but really is not this one thing far more important than all the rest? Last year we changed our by-laws, making it necessary that any reputable physician wishing to become a member of our society, must have one or more of several special qualifications. Those qualifications are excellent and should be required of men who wish to join our ranks. But if our society is to maintain its existence and is to add to its members from year to year, we must also have some means of giving these men, who wish to affiliate themselves with us, the necessary training. If we are to have, in other words, especially trained and scientific men in our ranks, we must provide some means for training them. Then and not until then will membership in this society mean an honor conferred upon a recognized specialist and not an "accredited application blank and a receipt for an initiation fee." It has even been suggested by some of our members that this society should consider seriously the question of conferring a degree, call it a fellowship or whatever you will, upon members who are taken in from now on. It may be an open question as to just what we should do in the matter in view of the fact that our numbers are yet small, but certainly with these advanced requirements and the progressive attitude adopted upon the part of this society, membership with us in the future will be an honor to be sought by any man.

Another matter upon which I would like to see this society take a firm stand this year is the question of a national standard of education for all schools. A few months ago former President Taft advocated a plan which would make a national standard of education practical by enlarging the Bureau of Education into a university, consisting of a corps of experts who would pass upon the efficiency, thoroughness and economy of the various school systems. It seems to me that if we look into the future with any sort of a discerning eye, we must see the handwriting upon the wall. A national standard for our universities must come, sooner or later, and when it does come it will facilitate the arrangement of courses, economize the time of

the student, do away with the necessity of separate examining boards and place all upon an equal footing. I am heartily in accord with President Chislett's recommendation to the surgical and gynecological society one year ago. In brief, his proposition was this, "The organization of a national educational foundation upon the broadest possible lines; make each of our colleges and hospitals affiliated institutions; adopt uniform entrance requirements and uniform curriculi based upon the demands of our best universities, arrange for the interchange of students and instructors, demand a compulsory interneship for at least one year and organize hospitals so that each large hospital would have one or more assistantships available where men wishing to specialize may have a three or five-year opportunity to perfect themselves, meanwhile doing the necessary research work which would admit them into membership in this or other surgical societies. By taking this advanced position public recognition would be accorded them. They would have a standard which only the best would follow and we would be educating a far stronger group of young men and women than we have ever had; men and women amply qualified and willing to shoulder the responsibilities which most of us would be glad to lessen and thus lengthen our own years of service as advisers to the younger generation."

Now about our Journal. At the last meeting Drs. Moffat and Palmer, who had so ably conducted the Journal for the last number of years, asked permission to retire. Dr. Palmer's health being such that he was unable to attend the meeting, Dr. Moffat acted as spokesman and set forth the financial condition of the Journal together with their reasons for wishing to be released. Dr. Moffat asked the society to take over the Journal and continue its publication. There had also been some talk of its purchase by individual members of the society, but it seemed, at that time, the most likely disposition would be its adoption by the society. A committee was appointed with full power to act. After a very thorough investigation and the expenditure of some $150 for an expert accountant to go over the books of business manager Palmer, the committee reported, as their opinion, "that private ownership would be better, provided enough of our members could be found who would advance the necessary funds for purchasing the Journal." Should this plan fail, they hoped a scheme might be worked out whereby the Journal could be owned

by the society. The committee felt that it would not be a wise move for the society to become owners of the Journal without a good deal of consideration, since the society was not incorporated and the individual members would become financially liable for the debts of the Journal. They, therefore, recommended that the Journal Committee be continued with power to secure the fullest information possible regarding the financial condition of the Journal, and that the committee be instructed to use its good offices in securing a purchaser for the Journal from among our members, and that the committee have full power to act for the society in the matter and to take such action as might become necessary to preserve the Journal as the official organ of the society. As you are doubtless aware, money was finally raised and the Journal purchased from Dr. Palmer as a private enterprise, thus releasing the society from any responsibility in the matter. Dr. J. R. McCleary, of Cincinnati, was secured as business manager, and Dr. Geo. W. Mackenzie, of Philadelphia, as editor. Quite a number of our members at once volunteered their services as associate editors and went so far as to take the responsibility of issuing, at least, one number per year, or being entirely responsible for an issue of the Journal at any time the editor might call upon them. Many of our members have also become very active solicitors for advertising and have, so far, been quite successful. It was also thought advisable by the advisers of the management to completely change the appearance of the Journal, not that it had not always had a very attractive appearance, but for the purpose of attracting more advertisers and of securing immediate attention of all of our readers to the magazine. Therefore, after a very deliberate consideration and the examination of many different cover designs, the one which was used upon the January issue and has been used since, was decided upon. As is always the case with anything new, there was some criticism of this cover design, but on the whole it seemed to meet the approbation of most of our members. The associate editor scheme has started off with splendid results thus far and bids fair to be one of the very attractive features. You are all, no doubt, familiar with the plan.

The hearty co-operation of our members in the new project has been evident nowhere more strongly than in the scheme suggested at our last meeting for the increase of the subscription list. The plan

at that time was for as many of our members as would do so to send the Journal for one year to the general practitioners and others in their immediate neighborhoods, *with their compliments*. This was so enthusiastically adopted that the subscription list was more than doubled in the first three months of the new management, and at this writing has almost reached the one thousand mark. With a subscription list like this it is not difficult to go to advertisers with the assertion that we have something worth while for them. My own experience in securing advertisers has been, in giving one firm exclusive rights for one year in their particular line, I very seriously offended another concern for not letting them in. We do not, in other words, now have to solicit advertising, but merely offer the opportunity. It is hoped if we continue in this way that the Journal will soon be upon a firm financial footing. This brings me to a very serious portion of my address with reference to the Journal. The change of business management, the rearrangement of affairs, the change of publishers, the enlargement of the Journal, the adoption of a new cover design and all have so materially increased the expenses of output, that the new management finds itself running behind with every issue. As this society has adopted the Journal as its official organ, it seems to me that we should take some paternal interest in its welfare. For a number of years we have been publishing our transactions every year at quite a considerable expense. We have paid, at least, two hundred and sometimes as high as two hundred and twenty-five or fifty dollars for these books to throw upon our shelves to become dusty and moth eaten. With the transfer of the publishing house from Lancaster, Pa., to Cincinnati this year, the officers of the society found that to publish the book and to distribute it to our members would cost something like four hundred dollars, the type having to be reset over quite a considerable portion of the material. The officers, therefore, decided that for this year, at any rate, we would not publish the transactions unless the society wished to expend the money. We did not feel that we had sufficient authority to expend that sum of money without your vote. We did decide, however, that with your consent we would furnish covers, and all those who wish to do so could follow the plan of the Institute and have the journals bound, the society giving them the covers. It has been suggested and I would like to recommend that this society adopt

as its plan for another year—the naming of the Journal as its official organ and requesting it to publish in its columns during the year the transactions of this society, together with all other papers read before the meeting, and all communications from our officers, and that this society pay the Journal a sum not to exceed two hundred dollars for such service, and that in return the Journal publish all transactions of the society, including all of its papers read at the annual meeting, all communications from our officers, and that the Journal furnish to each member of the society a cover suitably made and of proper size to bind the journals at the end of the year. It has been well said by one of our associate editors in an earlier number of the Journal, "When the members of the O. and O. Society learned that a change in the management of our official organ had become necessary, they experienced something very like a panic. A sort of first aid committee was formed and a considerable amount of their time and their money was spent before a way out of the perplexity was found, but it was found and you have the benefit. The Journal now has an editor and business manager that money could not procure, and one that insures its maintenance as a publication unsurpassed in its domain." I therefore recommend that this society come forward and do its part toward making our Journal the great success that we all feel it is destined to make. Dean W. Myers.

REPORT OF THE COMMITTEE ON THE AMERICAN COLLEGE OF SURGEONS.

Dr. James C. Wood, of Cleveland, the Chairman of the Institute Committee on the American College of Surgeons, has compiled a very careful report giving the history of the happenings in the college since the last meeting and the requirements which men will have to comply with before they can become members of the college after the next convocation in October or November, 1915. One convocation has been held, in Washington last November, since the last meeting, at which our O. O. and L. members, Dr. William H. Phillips and A. E. Ibershoff, were given their degree. The committee at that convocation secured the election of Dr. D. A. McLachlan, of Detroit. Up to the time of our interview with the Regents not a single homoeopathic surgeon had been elected to the college from the State of Michi-

gan. Dr. Carl Rust and Dr. McLachlan have not yet received their degrees. Your committee has been informed of the election of three of our members, Drs. J. I. Dowling, of Albany; Ralph I. Lloyd, of Brooklyn, and W. C. McKnight, of New York City.

There were recommended by the Institute Committee from this society one hundred and seventy-six members. The committee has a record of the following thirty-three men having been elected:

Howard P. Bellows, Elmer J. Bissell, Royal S. Copeland, J. I. Dowling, C. Gurnee Fellows, Edgar J. George, G. DeWayne Hallett, Burton Haseltine, Charles H. Helfrich, A. E. Ibershoff, Ralph I. Lloyd, Daniel A. MacLachlan, George W. McDowell, A. B. Norton, Gilbert J. Palen, Joseph M. Paterson, William H. Phillips, George H. Quay, George B. Rice, Frederick G. Ritchie, Herbertt D. Schenck, George A. Shepard, W. E. Waddell, Alton G. Warner, David W. Wells, Harold Wilson, Milton A. Barndt, Frederick W. Colburn, Alfred Lewy, George M. McBean, William C. McKnight, William M. Stearns, Carl H. Rust, Dean W. Myers.

If any name has been omitted from this list the committee would like to be notified.

The other one hundred and twenty members, so far as the committee knows, have made no effort to secure membership in the college.

Your committee has sent a very urgent communication to the committee urging that some of the members whose ability he can vouch for should have special consideration by the Credentials Committee. Whether such consideration will be given the committee is unable at this time to give you any idea.

While this record is far from satisfactory, so far as the election of our members as members of the college is concerned, the Institute Committee has secured the recognition of the surgical societies affiliated with the Institute, which includes the O. O. and L. Society.

Our organization has among the governors selected last year to serve for three years Dr. Royal S. Copeland and Dr. Burton Haseltine. Whether we will be entitled to any other members on the Board of Governors is not at the present known.

This completes my term as your representative, and you are requested to select my successor. My ability in convincing the members of the college through letters and otherwise that they ought to elect a much larger number of our members has been so far unsuc-

cessful, and I feel that another representative of the society might do a great deal more. Herbert D. Schenck.

Spray diphtheria carriers with formaldehyde. (Miller (*Med. Rec.*, July 25th) sprays their throat one hour before or two hours after the ingestion of food, beginning with one-fourth per cent.—one part of formalin (forty per cent.) to one hundred and fifty-nine parts of water—best used hot and prepared fresh daily; repeat every three or four hours. "The strength may be increased to one per cent. (one part to thirty-nine water), but this is very irritating unless tolerance be established.—*Med. Rev. of Rev.*, August.

"All goiters with exophthalmic symptoms," writes J. H. Outland and Logan Clendining (*Med. Rev. of Rev.*, August), "should have both lobes removed." "This does not cause any myxedema, as there is always enough thyroid tissue left in the isthmus and attached posteriorly to the capsule to functionate and supply the body with thyroid secretion."

GLIOMA OF THE RETINA WITH REPORT OF A CASE*

Jos. E. Sternberg, M. D.,
Boston, Mass.

GLIOMA of the retina, or as it is sometimes termed, glio-sarcoma or neuro-epithelioma, is a malignant growth that originates in the granular layers of the retina or neuroglia and rapidly increases in size. It is a rare disease, limited to childhood.

It may be present at birth or appear during infancy. As a rule it is not noticed by the parents until the pupillary area becomes white. It may affect one or both eyes, and leads to a fatal termination through extension of the growth to the brain, exhaustion, cachexia, septicemia, pyemia, or intra-cranial pressure.

Symptoms: Attention is first attracted to the shining, yellowish, glistening reflex from back of the pupil (Beer called it the amaurotic or cat's eye), and the eye is found to be blind. Owing to the tender age of the child the condition is passed unnoticed by the parents.

In the early stages there is no pain or inflammatory symptoms; later as the condition progresses the eye becomes red, painful, tender, the ocular tension is increased and the cornea becomes cloudy.

The tumor grows rapidly, filling the globe in a few months, and if not treated results in rupture of the eyeball in front and involvement of the optic nerve behind.

Diagnosis, as a rule, is difficult. The tender age of the patient, the rapidity of the growth, the absence of a previous history of inflammation, the white, shiny or yellowish glistening reflex from back of the pupillary area and the loss of sight serve to distinguish it from the following, which will need differentiation:

(a) Purulent disease of the vitreous (pseudo-glioma).

(b) Simple detachment of retina.

(c) Tumors of the choroid.

(a) Purulent disease of the vitreous is recognized by the previous history of some inflammatory disease, or through the infection caused by traumatism, normal or subnormal tension, the absence of blood-vessels and the subsequent course; the differentiation here may be

*Read before the O. O. and L. Society at Chicago, June, 1915.

impossible.

(b) Simple detachment of the retina shows undulation, the loss of vision corresponding to the area of detachment, the detached area is an opaque grayish membrane, the blood-vessels are smaller and appear as dark lines. The elevation varies from 3 to 5 D., and is best studied with the ophthalmoscope, noting the refraction of the normal areas of the retina and then comparing it with the elevation, which will require a stronger convex lens.

(c) Tumors of the choroid may occur at any age, are of slow growth, the margins are sharply defined, no movement of the growth is noticed and transillumination shows a dark arc if tumor is far enough forward (while gliomata are translucent).

Prognosis: Should be extremely guarded; early enucleation is always advisable. One should endeavor to get as much of the optic nerve as possible to prevent the disease progressing backward to the brain; even then a recurrence in situ is likely to take place.

Case: Baby M., age two and a half years, first seen by me July 6, 1914; female, white, normal delivery and breast fed; had scarlet fever with an uneventful recovery.

Subjective examination showed it to be well nourished playful and happy; weight about thirty pounds; chest and head appeared normal.

Father and mother living and in good health; have two other children, one seven years, the other four years, both living and well.

Right eye normal; pupil 4 mm.; reacts to light; Tn. vision 20/20 using characters; ophthalmoscopic examination negative.

Left eye—Tn. pupil 7 mm., glistening white pupillary area with sluggish reaction to light; vision nil; external appearance of the eye normal; urine negative.

It was the glairy appearance of the pupillary area that caused the parents to seek advice. They told me that when the child was one year old they noticed the shiny glare only at night; at one and a half years they noticed it both day and night.

Oblique illumination showed a golden yellow reflex.

Ophthalmoscopic examination—Refractive media clear; on the retina a yellowish raised shiny mass, elevation +4, the mass seeming to start in the vicinity of the papilla. The parents were told that the growth might be of a malignant nature and enucleation advised.

This advice was refused.

August 31, 1914. The child was again seen. She appeared slightly emaciated and fretful. The eye was slightly injected, tension +, anterior chamber shallow, pupil 7½ mm. Enucleation was again advised but was again refused.

November 9, 1914. Child again seen, and Dr. D. W. Wells was



January 1. Eyeball in situ.

consulted. Transillumination was tried but showed no opaque area, which excluded sarcoma, as the growth at this time was evidently

well forward.

January 1, 1915. The patient was taken sick with fever, vomiting and anorexia. She appeared to be in a stupor and listless, this continuing until January 7th; the parents becoming alarmed at her condition brought her in.

At this visit the lids were oedematous; the eyeball was of stony hardness, increased in size and protruding; the palbebral fissure enlarged so the lids could not close over the ball; the injection was marked.

The mother was told that in order to save the baby's life the eye should be removed at once. The next day (Friday, the 8th) the baby was admitted to the Massachusetts Homoeopathic Hospital, where the eye was enucleated. The operation was extremely difficult, due to the increased size of the bulb, and the effort made to secure a long nerve. It was, however, delivered intact and sent to the pathologist for examination.

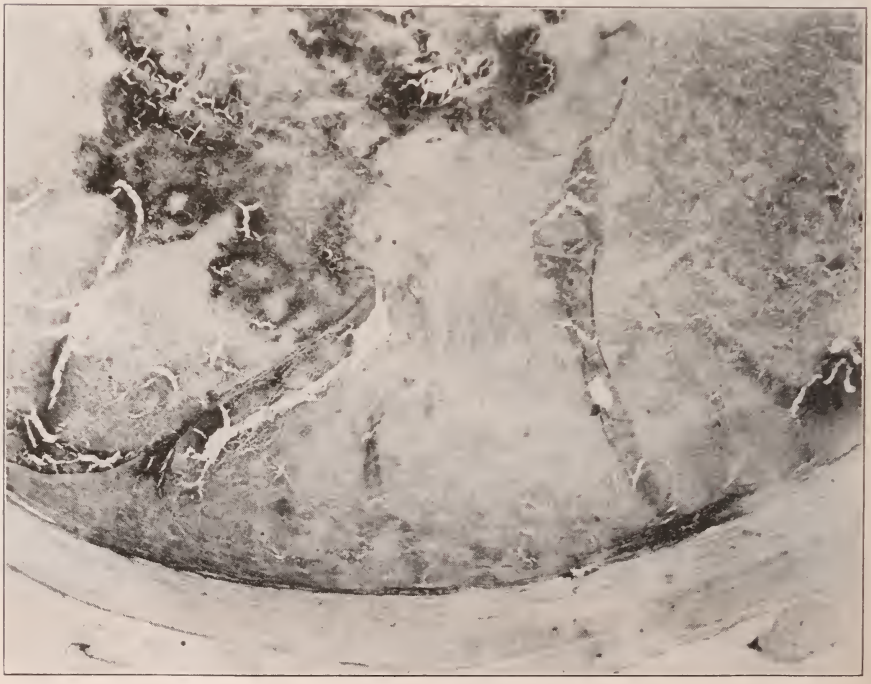


Dr. Watters reports as follows:

The eye when received was in a solution of formalin and alcohol. External examination shows an opaque cornea. The size of the

organ is not notable. The cornea seems to be projecting somewhat On section the entire structure of the eye has been apparently largely disorganized, the vitreous containing an abundance of grayish-white, apparently partially organized material, in which are numerous areas of brownish-red color. In the posterior part of the eye is situated a tumor-like mass extending over a distance of 1.4 cm. of the periphery and extending forward a distance of .5 cm. This mass is of a grayish-white color and of soft consistence. Projecting forward on the anterior part of this mass is an irregular mass .6 cm. in diameter. This is more deeply brownish-red apparently due to the presence of rather numerous blood-vessels.

Microscopic examination made of the tumor mass shows it to be made up of large numbers of small round cells, many of which are undergoing degenerative change. These cells are arranged in close collections, there being a very small amount of connective tissue between them. The nuclei are comparatively small, the cell outline in many cases being somewhat indistinct. A very few mitoses were found.



The tumor seems to be well supplied with vascular spaces, and in

some parts distinct hemorrhage has occurred. No trace of retina is found. There is, however, a moderate amount of brownish-black pigment unevenly distributed.

Diagnosis: Glioma.

January 13th. Patient discharged from the hospital. Examination at this time showed good apposition of the conjunctiva, some ecchymosis of the lids, and no discharge from the orbit.



Recurrence of growth: front view.

Subsequent history: Patient was seen January 18th, 25th and Feb-

ruary 8th; on these visits no recurrence was noticeable.

February 15th. Lower lid oedematous with no evidence of any growth in the orbit.

February 24th. Both lids oedematous with a mass in the orbit as large as a cherry.



Recurrence of growth; side view.

March 10th. Mass size of a plum; immediate removal of the mass

was advised but was refused.

March 16th. Marked increase in size of the mass, causing some difficulty in closing lids.

March 20th. Mass size of a small orange; at this visit child was in a stupor and had lost nine pounds since first seen. Immediate removal of mass was advised.

March 21st. Exenterated orbital contents. In order to facilitate the removal of the growth the fissure was widened by an external canthotomy; removal was easily accomplished, an incision being made through the entire length of the conjunctiva, above and below, through to the bony margin, the incisions meeting at the inner canthus. Both lids were now drawn apart with retractors and the growth shelled out with curved scissors. Careful attention was paid to the thorough removal of periosteum and small particles of tissue remaining. The canthotomy was closed with sutures, the cavity packed with iodoform gauze and a bandage applied.

March 24th. Bandage removed; gauze saturated with blood; cavity cleansed with bichloride and repacked.

March 30th. Sutures removed; lids healing by first intention and in good apposition.

April 2nd. Discharged from the hospital.

April 5th. Cavity looks clean; baby feels better.

April 13th. Has had a convulsion.

April 23rd. Has had two convulsions.

May 7th. Baby died.

100 Boylston Street.

VALUE OF PROPER CARE OF EYES DURING CHILDHOOD AND ADOLESCENCE*

R. G. Reed, M. D.,
Cincinnati, O.

EVERY organ of the body in which there is no malformation at birth will under normal environment reach complete development. Even malformations and abnormal developments may be brought to or nearly to the normal by being placed under proper environment; for instance, observe the remarkable results obtained by the work of the orthodontist and the orthopoedist.

Parturition marks one period in the development of the body. The organs of foetal life having performed their functions retire to the class called relics of foetal life, and other organs come into prominence as organs peculiar to childhood.

While the *structural formation* of the eye is begun during gestation, the completion of the *structural development* is not reached until long after that period. The end of gestation marks the beginning of its *functional* development; and from that time on the process of development, both structural and functional, is materially influenced by environment.

The normal child at birth is the undeveloped man. The normal eye at birth is the undeveloped eye of the adult. Structurally, the normal eye of the adult is the emmetropic eye. If such a thing were to occur as a child's being born with emmetropic eyes those eyes would be ametropic by the time the child reached adult life. Emmetropia at birth probably never occurs.

The eye, like other portions of the body, shows hereditary traits which affect its growth and its capability of resisting harmful conditions. Power of accommodation and visual acuity vary in children of the same age as truly as do their muscular and intellectual powers. Hence, to exact the same amount of work from all eyes of the same age is as harmful as to expect children of different bony and muscular powers to undergo the same amount of bodily exercise because they happen to be of similar ages.

*Read before the O. O. and L. Society at Chicago, June, 1915.

The underdeveloped eye is hyperopic and requires muscular effort to produce a clear image on the retina. Therefore, all the exercise needed for the development of the eye in the little child is that used in focusing parallel rays. In this connection allow me to quote from Dr. J. Hirschberg, who, in his essay on "The Treatment of Short-sight," says:

"The normal human eye requires to see to the remotest distances, while at the same time it must be adaptable to near objects. In fact, if one selects either small or large groups from people living in a natural, *i. e.*, an uncivilized state, and takes pains to exclude those suffering from a diminution of acuity—whether from an injury or a diseased condition of the eye—one will not find among them a single case of myopia."

The overdeveloped eye is myopic. *Proper* exercise of the eye produces emmetropia, while *excessive* exercise causes the eye either to remain hyperopic by stunting its growth, or to become myopic by encouraging nature to alter the shape of the eye so that the required work may be done with the least possible effort. Here we are confronted by the problem, whether to bring the child up as a savage with good eyes, or with a twentieth century education and deformed eyes.

There is no doubt that the present system of education tends to look to the physical as well as the mental development of the child. But I think you will all agree that there is very little intelligent attention given to the physical culture of the eye. The little ones are placed in the kindergarten at from three to five years of age, and beyond relieving them from doing fine work at the near point and regulating the light admitted to the room, nothing is done to bring about a natural growth of the eye, either as to structure or function. From the time of admission to kindergarten till the child reaches the age of sixteen there is one continuous grind of work for the eye to perform by the effort of accommodation. You are all as well acquainted with these conditions as I am, and my purpose in rehearsing them is to emphasize the fact that in our work of refraction among children we are continually laboring against unnatural environment. Like all physicians, we are continually implored to keep the patient well while he breaks the laws of nature. Generally the choice for the child is made by the parents, and when the decision turns on a choice between care on the part of the parent and the wearing of glasses by the child, the latter

is chosen.

Because of the constant change in the population of our modern cities and the transient nature of a specialist's work, it is difficult to demonstrate how much can be done by proper care during the early years. It is seldom we have the opportunity of watching a patient for more than a few consecutive years; so I take the liberty of presenting a case which I have had under observation for the past twenty-four years.

R. F. Born December 30, 1890. Apparently normal in every respect except for a decided squint in the left eye which looked like a convergent strabismus. His eyes received no professional attention until he reached the age of four years. Then he was bright and active and every inch a boy. At that age a competent oculist was consulted and a thorough examination made, and after two refractions under a mydriatic the retinoscope showed a mixed astigmia. Glasses were prescribed, which were worn till they were proven to be a hindrance rather than a help, as the patient stumbled frequently and in various ways showed that his vision was impaired rather than benefited by wearing the glasses. He was then allowed to go without glasses for a number of months, during which time his playthings were principally mechanical toys and blocks bearing large letters. As soon as it could be demonstrated that he knew the names and forms of simple block letters a mydriatic was again used, under which it was found by the subjective test that his vision was only 20/70, and that no glass, stenopaic slit, or hole improved his vision. He was then sent to the farm and allowed to roam through the fields at will during the following summers, and was not encouraged to look at pictures or to use his eyes for any near work except such as was required in the natural order of things.

At eight years of age his eyes were again refracted under a mydriatic with the following result:

O. D. 20/50—1.25 D^c ax. 180=20/20

O. S. 20/70—1.25 D^c ax. 180=20/30

He was given this correction and placed in school. It was not long until the parents were obliged to remonstrate with the school authorities against heavy night-work, of which, by the way, there should be none at all required during the first five or six years of school life; the parents also protested when, in punishment for misdemeanors, the

child was given extra written work to do—endeavoring to have him excused from all near work that was either useless or unnecessary.

The above correction was worn during the school months of the next two years; but he was not required to wear them during vacations, which were spent as usual on the farm. The following year he was allowed to go without glasses at school till the last third of the term, when on account of headache he was given

O. D. 20/30—1.00 D^c ax. 180=20/20

O. S. 20/30—1.00 D^c ax. 180=20/30

This was given when the patient was eleven years of age and worn at intervals for two or three years and then discontinued.

At the age of twenty, while in the midst of heavy work in the university, he again complained of headache and was given minus 0.75 D. cylinder over each eye, which gave vision of 20/20 in each eye. These were given for near work and are only used when the eyes are tired.

This patient is now twenty-four years of age, has completed the work in the grades, high school, and a five-year course in the engineering department of the university, finishing at the age of twenty-three, and graduating with the honors of his class. He is now a chemical engineer and is able to see 20/20 with each eye and during the past ten years has shown no sign of convergence.

Discussion

C. G. Fellows: I am glad to hear this interesting paper. We are apt to believe, when we find a patient having a certain refraction, that it will continue the same indefinitely. But a young person changes with growth, and refraction changes, and I believe that the eye can be trained into better shape by allowing it to make some effort, and not putting everything at ease with glasses. Most of our patients do as they please about wearing their glasses, even when commanded to keep them on all the time. Dr. Reed had the nerve to order glasses off the patient and achieved a success.

J. A. Campbell: We must give them a little credit for trying to improve, especially in regard to the work in the kindergartens. In 1876 at a meeting of the Indiana Institute of Homoeopathy I read a paper that got me into some trouble; the subject was the effect of kindergarten work upon the eyes. My criticism was in regard to the close work that the children were doing. Miss Blow, one of the first

and best known of the kindergarten workers, got hold of the paper and said that it brought her to her senses. They modified and improved the work very much after that, so give them credit for trying to improve.

G. D. Arndt: In our present educational methods the eye is used too much and the senses too little. It is important that more use should be made of the ear. This would lessen materially the strain on the eyes and give us better results. While a member of a board of education I studied systematically this particular aspect of our school work and found that there is almost no training of the ear and other senses. The art of listening attentively is scarcely developed at all. It is one of the great defects of our educational methods.

W. E. Boynton: The amount of close work required in the public schools is entirely too great, particularly in the lower grades. In addition to the regular tasks "home work" is required of children as young as ten years old, and "extra work" inflicted as punishment for minor misdemeanors. As oculists we know the evil effects of this excessive use of the eyes for close work, and it is a duty we owe the public that we go on record as condemning the methods now employed.

As to the value of ocular correction in conditions due to eye defect, I recall a case of torticollis in a boy of some six years that has virtually cleared up under use of prisms correcting a hyperphoria.

R. G. Reed: I will make a confession in regard to this case. I had an unusual opportunity of observing it through all the years, as he is my son, and therefore a case of particular interest to me. I referred to the condition of his eyes at birth as an *apparent* squint, for that is what it was, due to an under development of the structures of the eye. After nearly twenty-five years' experience in protecting this child's eyes from injurious influences I have reached the conclusion that educators in general have little or no intelligence concerning the proper use and care of the eye. To them the paramount issue instead of being the symmetrical development of the child seems rather to be the amount of work that can be extracted from him. A great deal of the work done at close range is really unnecessary, and the eye is either stunted or over-developed in consequence. If the other special senses were made to play a greater part in the intellectual development, as they could and should do, the eyes would not need to be taxed as they are.

THE SMITH-INDIAN INTRACAPSULAR OPERATION FOR CATARACT AND THE RESULTS OBTAINED BY IT*

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WE seldom pick up a medical journal today in which we do not find some reference to that condition of the lens known as cataract, with particular regard to its removal.

During the past few years there has been a decided change in the operative procedures suggested. This has been due largely to the fact that patients have heard that cataract may be removed during its early stages of development and they have eagerly sought this opportunity. Furthermore, the ophthalmologist has made great progress in this particular field of operative work.

A few of the author's cases will next be considered. Ordinarily, results are stated in tabulated form at the end of the paper, but this phase of the subject has been introduced at this point so that the general practitioner and the layman may understand this important subject more readily. For the same reason, also, technical terms have been omitted so far as possible.

These few cases have been selected with the idea of covering the various types of patients, the various types of cataracts, and the limits of ages. The last is in itself a matter of no small importance.

Case A.—J. G. This patient was a man, aged twenty-seven, who had a well developed cataract of the right eye. The cataract had been forming three years and, judging by the history of the patient, was luetic in nature. He could perceive light with this eye, but that was the extent of his vision. The intracapsular operation was performed. The patient experienced no pain either during the operation or afterward. The bandages were removed on the ninth day and the wound was found to be well healed and the eye free from inflammation. As the capsule of the cataract had ruptured in this instance, it was necessary to perforate the remaining capsule with a needle after the eye had healed. This was done without any trouble resulting, and the patient was discharged from the hospital eleven days after he had entered. The patient removed from the city shortly after this, so

*Read before the California Homoeopathic State Medical Society, June, 1915.

it is impossible to report upon his vision, but it is safe to say that the function of both eyes is bound to be impaired owing to the condition of the patient's health.

Case B.—B. F. This patient was a man, aged fifty-five, who had but one remaining eye. In this eye was a well developed cataract which had been present about four years. His vision was light perception only. The cataract was removed by the intracapsular method. The bandages were removed nine days later and the eye was quiet and well healed. One month later the smoked glasses were replaced with lenses which gave him 8/10, or almost normal vision.

Case C.—T. N. The patient, a man of sixty-six, was found to be suffering from immature cataract of both eyes. His vision had been failing gradually for a period of ten years or more, but if it continued to do so at the same rate it would still be a number of years before the cataracts would become fully matured or ripe. His vision was 10/200. His blood pressure was 210 and persisted in remaining at this mark. The intracapsular operation was performed on the left eye, and in spite of the high ocular tension the cataract was delivered without loss of any of the vitreum. The bandages were removed on the ninth day as usual, smoked glasses were ordered and recovery was uneventful, with a resultant vision of 8/10. The risk of operating when we have a high blood pressure is far greater than it is ordinarily, but we see that it can be done successfully.

Case D.—J. A. The patient, a man aged fifty-six, was found to be suffering from immature cataract of both eyes. His vision had been failing rapidly during the past four years and now was only good enough to distinguish fingers at a distance of five feet. He had a history of repeated attacks of rheumatism and irido-cyclitis. An intracapsular extraction was performed on the left eye. The bandages were removed on the ninth day and the eye was in good condition.

Three days later he began to show symptoms of irido-cyclitis in this eye and this condition persisted for four weeks, after which time the inflammation cleared up, leaving the eye in good condition. Some haziness of the vitreum was present and with the cataract removed this was visible with the ophthalmoscope. Vision in this eye was brought up to 2/10.

Case E.—J. K. The patient, a man of sixty-two, had had a cataract in his right eye for seven years and now it was found to be hyper-

mature. The vision in it was light perception only. He had been losing the vision of his left eye very rapidly during the past six months until now it was 3/10. He had been to different men, but they had told him that nothing could be done for his left eye at present, and that they did not care to touch his right eye because some signs of degeneration of the lens were present. The condition of the patient was such that it seemed a favorable case for a double operation, so both eyes were operated upon at the same time and by the intracapsular method. Both operations were a complete success. The bandages were removed on the ninth day and smoked glasses ordered; two days later the patient was allowed to go home and six weeks later was allowed to have his glasses. The vision of each eye is 10/10, that is, normal vision.

It is not permissible in many cases to operate upon both eyes at the same time, but here was one which gave a beautiful result. I believe this to be the first of its kind to be attempted by this method in California.

Case F.—M. K. The patient was a woman, aged fifty-seven, who had a history of diabetes. Examination of the eyes showed an immature cataract of each eye allowing her vision in the right eye of 7/100 and in the left eye of 3/100 and for two years this condition has remained practically the same. Her physician reported that at the time she came in for an examination of her eyes her health was better than it had been for some months, but that the sugar content of the urine could not be reduced lower than six per cent. This condition of course was a great handicap and yet it was decided that an operation be attempted. An intracapsular extraction was performed upon the left eye. Healing was slow but sure and the patient now has normal vision in that eye. It is not to be expected that every case with a history of this kind will turn out so well, because sometimes the wound will not heal.

Case G.—E. W. The patient, a woman aged seventy-one, was found to be afflicted with mature cataracts of both eyes. Her health had been somewhat impaired because of kidney trouble, but at the time she came to consult the writer she had apparently recovered. With her right eye she was able to distinguish fingers at one foot distance, while with her left eye she could distinguish fingers at three feet. This condition had remained unchanged for four years. An intra-

capsular extraction was performed upon the left eye and the patient was allowed to go home on the eleventh day. Her result is 10/10, or normal vision.

Case H.—S. F. The patient, a woman aged ninety, was found to be afflicted with senile cataracts. Her health was good and had always been so. She had been blind for twelve years, but her perception of light was very good. The right eye was operated on by the intracapsular method, the bandages were removed at the usual time and the patient was allowed to go home three days later. After wearing the smoked glasses for four weeks she was given her correct lenses and these gave her vision of 8/10, which in her case would be practically normal vision.

These eight cases will serve to illustrate the various types which present themselves for our care. Ninety-five per cent. of all cataracts may be successfully removed by this method. Five cases out of every one hundred will result in failure for the following reasons:

First. Failure of the wound to close.

Second. Liquid vitreum which may escape in a large quantity at the time of the operation or subsequently.

Third. Intraocular hemorrhage may occur.

Fourth. Post-operative iritis with its resulting occlusion of the pupil or opacities of the vitreum.

Fifth. Primary or secondary infection.

HISTORY OF THE OPERATION

About twenty years ago, Major Henry Smith, surgeon of the British army stationed in India, decided to employ a new method for the removal of cataracts. His efforts were crowned with success and he has performed over 30,000 extractions by this method. He has given this operation unreservedly to the world, and many men have traveled to far-away India to receive instruction from this great man. Hundreds of men and women of our own country are now enjoying good eyesight because of the fact that Dr. Smith gave his operation such publicity; were it not for this a large number of these same people would still be waiting for their cataracts to ripen so that they might be removed by the old method. Some of the men who have gone to receive this instruction have added a few changes to the technic and have introduced new instruments, which make the work all the more safe. One such man is Dr. W. A. Fisher, of Chicago.

who has introduced the double hook lid-retractor, a lower lid-rectractor and a spoon-needle.

THE OPERATION

It is not a simple matter to offer an accurate description of this operation, nor is it wise for an operator to attempt to master the operation after having studied a description of it. One must obtain personal instruction from a proficient and experienced operator, otherwise there will almost surely be an accident.

The patient is examined in the ordinary way, especial attention being paid to the examination of the urine, heart and conjunctival secretions. The patient is then prepared as for any other major operation. The skin of the face is thoroughly cleansed by the operator; the lashes are cut from the outer half of the upper lid; the eye is irrigated with a warm 1-5000 bichloride solution, the container being held so as to give a fall of about half a meter. The eye is then cocainized with a four per cent. solution of cocain at intervals of about three minutes until five drops have been used, and this is followed with a drop of 1-1000 adrenalin chloride solution. After this the eye is irrigated again gently with warm boric solution. The lids are now retracted by a trained assistant.

The method of operating upon the left eye is as follows: The patient is instructed how to hold the eyeball fixed so that it does not roll up or down. The operator stands at the left side of the patient and facing him; he grasps the eyeball below the cornea with a fixation forceps held in his left hand. The knife is held loosely between the thumb and first two fingers of his right hand and its point is introduced into the cornea opposite the external canthus and as close to the iris as possible, the blade being held at an angle of fifteen degrees with the iris. The counter puncture is made at a point directly opposite and the blade is now carried upward through the cornea with a single sweep, but not with a sawing movement, as is done in the old method. The upper edge of the wound will be seen to be well within the upper margin of the cornea. The distance between the puncture and the counter puncture is the greatest that it is possible to obtain, thus giving the widest possible incision through which to deliver the cataract. By placing a small pair of curved forceps astride the wound and exerting a little pressure, the iris can be expressed and its edge grasped with the same forceps. Then while holding it a small portion of it can be

snipped off, thus performing the iridectomy. During this part of the operation a second assistant holds the eyeball fixed.

The operator now assumes a position on the right side of the patient and, while holding the spoon in his left hand and in readiness to introduce it behind the lens if the vitreum should present, he holds in his right hand a tenotomy hook, places its point flat against the cornea three millimeters above the lower margin and with it he exerts steady pressure against the eyeball in the direction of the optic disc. In a few seconds the zonular ligament will rupture and the cataract will mold itself to fit the opening and will slowly emerge. When it is half way out, the pressure is removed and the tenotomy hook is used to stroke it out the remainder of the way and thus leave all the vitreum intact.

If the vitreum should present the spoon is introduced behind the cataract while discontinuing the pressure. When the spoon is in place the pressure is directed against the spoon and thus expresses the cataract upon it. With a specially devised instrument the cut edges of the iris are now replaced and the operation is completed.

The first part of the operation upon the right eye is accomplished in a different manner. It is best not to try to operate with reversed positions, because to do so would necessitate making the incision with the left hand. The operator stands at the head of the patient and facing his feet. He makes the incision with the right hand by pulling the blade toward him through the cornea with one steady sweep. The remainder of the operation is completed while standing on the right side of the patient and is the same as when operating on the left eye.

THE DRESSINGS

The eyes are both covered with a pad of soft gauze which has been well anointed with a two per cent. solution of yellow oxide of mercury ointment. Over this is placed small pledgets of cotton and then a starch bandage is put on to hold all in place. This dressing is not removed for nine days unless the patient complains about the eye in a way which would indicate that some trouble is present.

THE ASSISTANTS

Two assistants are required. The first assistant holds the Fisher lid retractors in place and to do so requires skill and personal instruction. With these two instruments he lifts the lids clear from the

eyeball and at the same time does not interfere with the work of the operator. A number of eye speculae are on the market, but none of them is so safe for use in this operation as these two instruments which Dr. Fisher has devised, because the use of any other instruments but these will result in a loss of vitreum in a large number of cases.

The second assistant holds the eyeball fixed while the iridectomy is being performed.

POST-OPERATIVE TREATMENT

The patient must lie very quiet on his back for the first twenty-four hours and must keep his head low; after this he can have his head elevated a little and can turn from one side to the other, but must not sit up until the eighth day. He can eat whatever he desires and if he is accustomed to smoke this must not be denied him. Care must be taken also to see that his bowels move regularly, as this is very essential. The room must be kept darkened. The administration of indicated remedies will aid the work materially.

THE INSTRUMENTS

Dorland-Smith cataract knife.
Fixation forceps.
Scissors for cutting the lashes.
Iris scissors.
Fisher hook upper lid-retractor.
Fisher lower lid-retractor.
Fisher spoon and needle instrument.
Iris replacer.
Small curved iris forceps.
Tenotomy hook.

COMPARISON OF THIS METHOD WITH OTHER METHODS

Under the old method, the patient who is losing his sight because of cataract is told that he will have to wait patiently until the cataract is ripe, as it is impossible for him to have it removed until it is fully matured. This is a slow process, as it usually covers a period of years, and during this time the patient loses his sight entirely. His health becomes shattered; his business must be sacrificed and he becomes a semi-invalid.

At last the time comes when he is told that he may have his operation. He is sent to the hospital and a preliminary operation is per

formed; this is known as the iridectomy. The patient returns home in a few days. About two months later he returns to the hospital for the removal of the cataract. This is done by making a corneal incision which differs materially from the one described above; a second instrument is introduced into the eye, the anterior capsule of the cataract is cut and the cataract is expressed through the incision. This operation leaves the posterior capsule of the cataract untouched and it is necessary to introduce a knife needle and cut this capsule some days later. This needling process may have to be repeated a number of times. If the healing is satisfactory the patient is allowed to leave the hospital a month or six weeks after the operation.

The resultant vision is usually below normal because post-operative iritis may develop, opacities may form in the vitreum, or there may be that common impairment of the function of the retina which accompanies the lowered vitality of the patient. If vision of 3/10 or 5/10 is secured it is considered a good result, whereas we usually find a result of 10/10 or normal vision when we operate by the intracapsular method upon an otherwise normal eye.

Under the intracapsular method, the treatment of such a case would be as follows: Examination shows that the dimness of vision is due to developing cataract. The intracapsular operation is performed at once. Between six and eight weeks later the patient is back at his work again with normal vision and has never been blind.

The man who has a well-developed cataract may have the same operation, and in a majority of cases the results are better than they would have been had the operation been performed the old way.

SUMMARY

1. The intracapsular operation is not so complicated that the patient need have dread of undergoing several operations. One operation is usually all that is required and it is performed without pain.

2. A cataract can be removed at any stage of its development by this method and while the patient is enjoying good health.

3. Better average vision is obtained because the retina is not impaired in function and because post-operative inflammation is not likely to occur.

4. There is less danger of infection because but one instrument is introduced into the eye and because the bandages are not disturbed until the wound has healed.

5. The hospital treatment is about half as long as it would be if the old method had been employed.

6. Successful results are obtained in ninety-five per cent. of all cases operated on by this method.

7. It is especially adapted for institutional practice because one operation completes the work and daily dressings are not necessary.

8. This intracapsular operation for cataract is the safest yet devised.

9. The chances of losing vitreum are no greater in this operation than in any other and when this does happen it is due usually to faulty technic.

10. This operation should be adopted universally.

The author has been having splendid success with this operation and it is gratifying to state that the pleasure which these patients are now enjoying from restored eyesight and the gratitude which they manifest is in itself a recompense which cannot be overestimated.

"Truly the light is sweet and a pleasant thing it is for the eyes to behold the sun."

209 Post Street.

THE INTRACAPSULAR OPERATION FOR CATARACT: A SURGICAL ADVANCE*

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THE intracapsular operation for cataract, known as the Indian or Smith method, with the American modification introduced by Fisher, of Chicago, makes a distinct and important advance in ophthalmic surgery and should engage the earnest attention of all ophthalmologists. American surgeons have performed hundreds of intracapsular operations in the Smith Clinic in India, returned home filled with enthusiasm for the new method and have adopted it for use in their routine work. This is probably true to a greater extent in Chicago than in any other American city, where in the winter of 1914 and 1915 the writer observed twenty consecutive cases, upon which the major part of this paper is based. The almost universal fear and dread of loss of vitreous has been so far the great obstacle that has prevented the adoption of this method by many conservative surgeons. If this danger could be overcome it is quite generally admitted that this new method has great advantages.

The usual course of the average cataract case is a common and pitiable one as the patient waits months and perhaps years, gradually growing blind, with the accompanying mental depression, shattered health, and economic loss. The Smith operation eliminates this picture immediately and completely and, barring dangers too great to be ignored, this alone should be sufficient to gain it instant attention. With the Smith method practically all cataracts are operable at any time and there is no need to wait for the ripening process, although the reminder may be necessary that cases vary greatly in difficulty; but it is worthy of note here that these twenty cases contained one juvenile.

The perfect and complete mastery of a carefully developed and exact technic is the absolute sine qua non of success, and anything short of this invariably means failure and disaster. The extraction of the lens in its capsule without loss of vitreous is the goal of this

*Candidate's Thesis for Admission to the O. O. and L. Society.

operation; but the capsule may be left and yet the operation be a great success judged by the standards of the old operation. To escape loss of vitreous is the all essential feature. In the language of Dr. Fisher, "The vitreous is not a crawler." In other words, it will not escape unless it is forced. Pressure is the one great cause of loss of vitreous, and one of the most prolific direct causes is the pressure of the lids upon the eyeball. The introduction of Fisher's double lid hook absolutely eliminates all danger from this source, provided of course that the assistant has thoroughly mastered the technic of its use.

If the right eye is to be operated the assistant stands at the patient's left and, holding the hook in the right hand with fingers resting upon the patient's nose, and thumb of left hand holding down the lower lid, introduces the lid elevator and holds the lid away from the eye until the incision and iridectomy are finished. He then removes the lid elevator and introduces the double hook at the opposite end, holding it in the same position until the operation is completed. If the left eye is to be operated the assistant stands at the right side of the patient, holding the lid elevator in the left hand and keeping down the lower lid with the thumb of the right. When the incision is finished the assistant goes to the left side of the patient and introduces the double lid hook and holds it in position for the iridectomy and the completion of the operation, the same as on the right eye, except that the fingers rest on the side of the face instead of the nose.

The double lid hook is used in two positions, (1) for holding the lid up and away from the ball, and (2) for pulling the lid down towards the patient's feet when nervous or loss of vitreous threatens. Too much emphasis cannot be placed upon the necessity of the perfect and complete mastery of the technic of the lid hook on the part of the assistant, and any failure or shortcoming on his part, though it may seem trivial to him, may irretrievably ruin the work of the most skilled operator. This technic cannot be acquired from books, but must be practiced upon the cocainized human eye. The usual preliminaries for ophthalmic operations, including the microscopic examination, must be carefully observed, and the eye is flushed with a one to five thousand bichloride solution from a fountain syringe with a fall of half a meter, while the lid is held open with the lid hook. Dr. Fisher cocainizes the eye with a single instillation of a four per cent. solution of cocain, and every one of his patients in this series declared

the operation painless.

The operator in making the incision and iridectomy upon the right eye stands behind the patient, and in extraction to the front and right. He occupies the latter position in extracting on either eye. The puncture and counter puncture are made at or near the limbus and the incision completed with one sweep of the knife, leaving a perfectly smooth edge. Sometimes the puncture is made well out on the sclera, for it is of much greater importance to make a big, broad incision rather than a high one. The advantages of a corneal incision made with one movement of the knife rather than by a sawing motion are very obvious. In performing the iridectomy it is usually unnecessary to insert the iris forceps into the eye. The lens is delivered by making pressure with the Smith hook placed flat on the cornea, the point being at a distance of about three millimeters from the sclero-corneal junction; the pressure is made directly downward towards the optic disc. If the patient does not look up voluntarily he should be asked to do so, as this position aids replacement, while a downward movement of the eye after the incision is made is dangerous. The iris is tucked back into the wound, if any protrudes, the edges approximated, the lashes covered with yellow oxide, a light dressing applied and both eyes bandaged, but so as to make no pressure.

Without positive indications for doing so the bandage is not touched until the ninth day. It has been found by the experience with the cases in the United States, as well as the thousands of India, that this rule is just as applicable to the wounds of the cornea as when employed—as it is the general rule to do—in all other surgical wounds; and here for the same reason the danger of tearing open a partially healed wound is obviated. If the iris should become prolapsed this course would merely be in harmony with the opinion that it is better to wait until the wound is completely healed before clipping, and if infection has occurred the patient will make it known by unmistakable signs. This completes very briefly the technic of an ordinary, uncomplicated Smith operation. But when loss of vitreous threatens a special instrument and technic are necessary. Fisher's instrument, consisting of a Smith spoon at one end and a sharp needle at the other, is all-sufficient. When a bead of vitreous appears at the incision, as a forerunner of more to come, the spoon is inserted into the eye behind the lens, the pressure resumed, and the lens delivered upon the spoon

which it is very necessary to hold in place until the complete expulsion of the lens, and not withdraw with the lens or loss of vitreous will surely result. This spoon should be used only after a small amount of vitreous has already escaped and it is to be noted, incidentally, that the loss of a small amount of vitreous is immaterial.

Dr. Fisher describes the use of his needle as follows: "The needle is used to avoid loss of vitreous at this critical moment when the operator has made what he considers safe pressure and the lens does not move but is sticking in the gaping corneal wound, the point of the needle is stuck into the lens and the lens gently lifted past the obstruction, when the delivery is finished by pressure upon the cornea with the hook, according to the Smith method."

The writer is not aware of any reports up to this time showing the proportion of ruptures resulting from use of the needle, and this would be difficult to determine with certainty because of the occasional spontaneous ruptures; but when a rupture occurs, either from use of the needle or spontaneously, no harm whatever is done except to leave behind the capsule and that is exactly what would happen with the old technic. However, we have probably gained in every way where time is a factor. "The more skillful the operator is in removing the lens in its capsule the less will he be called upon to use the needle or the spoon."—(Fisher.) With the perfect mastery of this technic, especially the use of the Fisher needle, and infinite care in its execution, it is not too much to claim that loss of vitreous can be made as infrequent by the intracapsular method as occurred in the old operation with the old technic. The technic may be acquired with practice upon the eye of the pig, but the Smith operation cannot thus be done in detail because of the toughness of its zonula, which cannot be broken with pressure; however, this may be done directly with an inserted instrument and then every movement of the operation executed upon the same eye and repeated without limit.

Of the twenty cases under consideration thirteen were performed by Dr. Fisher and the rest by Drs. Hoffman, Tydings, Gradle and Wippern. These may all be summarized in a general way as follows:

Failure to extract the capsule resulted in four cases, although two of these were operated under very unfavorable conditions.

There was one case of prolapsed iris.

There was no case of infection, although one that had come a

long distance had an infected sac, could not wait, demanded operation, and was operated under protest.

There was no post-operative astigmatism nor "drawn-up pupil" and what is more important there was no case of loss of vitreous in quantity sufficient to be worth considering for practical purposes.

The visual results were all excellent, most of them getting 20/20.

Dr. Fisher has summarized the advantages of this method as follows:

1. It can be performed as soon as the patient is unable to attend to his ordinary duties.
2. It is especially indicated in immature cataract.
3. The patient is operated upon when his health and spirits are good.
4. Post-operative inflammation rarely follows.
5. Second operation is not necessary.
6. There is less danger of infection.
7. Average time in hospital less than half as long as in old operation.
8. Visual results are better.

Finally the opinions of a few whose wide experience gives them the right to speak are worthy of earnest attention.

Dr. Derrick T. Vail says: "I have entirely abandoned the technic of the old operation. I have not used a cystotome since my return from India. I have scarcely any use for a discission needle. In my series of three hundred and fifty-eight cases in India I saw vitreous, a mere drop, in only two per cent. of those cases."

Dr. Oliver Tydings says: "Now the question is, is it possible for a good operator to so protect his patient in this operation as to make him as safe or more so than by older methods. To this I will say yes, infinitely more safe."

Dr. H. H. Brown says: "I feel certain that a new era is opening to us in the extraction of the cystalline lens from the eyeball."

Thomas Faith says: "The technic of extracting the lens seems to be far superior to the old method."

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"The development of **civic medicine** in the enlargement of the social activities of municipalities is largely dependent upon the active co-operation of physicians. . . . There is at present no other group of students whose business makes them familiar with all of the human being. . . . Civics must rest on medical knowledge. . . . Considering that the medical profession is today beginning to be recognized as the most difficult, complex and important of the professions and is beginning to arrive at its true position in the community— . . . it is proper that we adjust ourselves to the call which must and will be made in the near future for service to the state. Let us remember that if we are not prepared to do the work progress will stop, and if we do it well we ought to receive pay for our labors."—*Med. Rev. of Rev.*, August.

Early recognition of cerebro-spinal syphilis. Lemchen (*Med. Rev. of Rev.*, August) underlays 0.5 c.c. of spinal fluid in a small test tube with an equal amount of chloroform for twenty or thirty minutes. If there be increased globulin a dome-shaped precipitate forms on top of the chloroform, looking like snow on a roof. He writes: "While an increase of globulin does not always signify cerebrospinal syphilis, under which term I also include tabes and general paralysis, still it is sufficiently suggestive thereof to put the practitioner on his guard; giving the patient the benefit of every doubt."

A SIMPLIFIED OPERATION FOR MAKING AN ARTIFICIAL PUPIL IN SECLUSIO PUPILLAE*

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(Given Extemporaneously.)

WHEN I sent the title of my contribution for this program to the Secretary I was so greatly impressed with the possibilities of my material that I could not appreciate either its meagerness or its simplicity; so when I began to write my paper I found I had very little to write about. The operation is so simple that it seems impossible that it can be new. I finally decided not to write, for I feared that I might be guilty of presenting kindergarten material, which would not only reflect discredit upon myself but upon the society as well.

Still I am compelled to say that diligent search has not shown any mention of this operation in our literature, though it is simplicity itself, as well as possessing a value over all other operations I have ever tried myself or have seen others try which can hardly be estimated.

I am sure we have all tried our hand at the classical operation of iridectomy for the condition of seclusio pupillae, for both visual improvement and the relief of the glaucomatous symptoms that constantly annoy; but I am also sure that no one has ever had occasion to be very proud of his results. Now this operation has never yielded me a poor result.

I begin by making an incision with the ordinary keratome as for a regular iridectomy, introducing the point well in the sclera, and I make it about as wide. When this is completed I withdraw the blade until the point has reached the iris attachment, when it is depressed and the point driven through the iris and a small opening made. The De Wecker scissors are then taken and one blade passed through the iris opening and the other passed into the anterior chamber, and the iris severed near its attachment for a distance of one-fourth, or a little more. The corneal incision I usually make from the side of the

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internal canthus, and the iris is cut upwards. This results in the severed portion of the iris falling down in a loose fold, making a splendid pupil. No tension is put upon any tissue at any time, hence the danger from trauma is entirely eliminated. The operation is entirely painless and is very quickly done.

DISCUSSION

G. A. Suffa: Do you ever make the incision from above?

Philip Rice: No, rather from the inner angle, since this places the pupil in a more favorable position.

D. W. Myers: Have you ever injured the lens with the point of the knife?

Philip Rice: No, never. The broad incision is made in the usual way, the point of the knife being always in view. For the incision through the iris the point is carried inward only to a sufficient extent to make a puncture, since the blade of a De Wecker scissors is very narrow.

W. H. Phillips: What are the usual visual results?

Philip Rice: That depends entirely on the condition of the fundus. In one case I got a beautiful pupil, but found after this was made almost complete destruction of the retina. If the media and the fundus are in good condition then you can be certain of distinct improvement in the vision. One thing is certain; you will relieve the glaucomatous condition and add immensely to the comfort of your patient.

G. W. Mackenzie: Is there much reaction following the operation?

Philip Rice: Very, very slight. Sometimes no more than we get from the removal of a foreign body. I should very much like to know if any member has seen the operation done before or has heard of it.

THE VALUE OF THE OCCLUSIVE BANDAGE IN CORNEAL AFFECTIONS*

CHARLES LESLIE RUMSEY, M. D.
Baltimore, Md.

INSPECTION is the method of examination of the cornea. It should be of microscopical minuteness by focal illumination and the corneal loupe. The cornea maintains its transparency only when the close normal apposition of its elements is maintained. The slightest disturbance of this normal arrangement of its five layers impairs the transparency, and pathological processes become obvious. Fluorescine should be used to amplify and confirm our observations, and not for primary inspection, and should not be washed out with a cocain solution to intensify its color; this damages the epithelium.

Traumatic and secondary inflammations of the cornea are usually suppurative in character, while idiopathic inflammations are not accompanied by the formation of pus. The bacteriological classification of corneal diseases is the approved classification, bringing together those conditions which result from the action of the same cause. In all corneal traumatism, it is most important to learn the state of the lachrymal apparatus. After observing the puncta, the lachrymal sac should be compressed in its fossa. If any fluid exude from the puncta, the lachrymal passages are not clear, and a specimen of the fluid should be secured for bacteriological examination. The patency of the lachrymal passages can be determined by injection of fluorescine or saline solution, with the patient's head well forward, to see if fluid will drop from the nose. The mechanical cleansing of the cornea by winking is wonderfully complete. To this may be added the lower temperature of the cornea, due to its exposure, which is unfavorable to the development of many pathogenetic bacteria. As soon as there is any abrasion of the corneal surface, however, bacterial colonies will at once invade the corneal tissue. The more superficial the abrasion, the more painful is the condition. The nerves of the cornea lose their medullary sheath and divide dichotomously to form large

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plexuses which ultimately end in a fine plexus beneath the anterior epithelium. If these sensory nerve endings in epithelial layer be destroyed by the lesion, the subjective phenomena are much less severe, as is actually observed in the deeper abrasions.

Two cases of erosion have recently come under the care of the writer, one by a finger-nail and the other with an indefinite history of something striking the eye while changing the window-shade during house-cleaning. In the finger-nail case, fluorescine revealed no break in the corneal epithelium. There was a loosening or separation of the corneal epithelium, shown by a faint smoky area by focal illumination and corneal loupe. It was impossible to determine any difference in level between the dull area and the surrounding bright surfac. There was congestion of conjunctiva with slight ciliary injection, and lachrymation. The patient suddenly waked with decided pain in the eye. This pain continued for weeks, though there was temporary improvement. After the patient's cornea had been massaged with one, two and three per cent. yellow oxide of mercury cerate, even twice daily, ineffectually, the epithelium was carefully removed by a sharp curette in order to stimulate regeneration, using an "occlusive bandage." This bandage is apt to be laid aside too early. It should be kept on for a few days after the epithelium has been replaced. The boric or weak sublimate ointment should be used at bedtime, to prevent the lids sticking and favoring recurrence of the erosion. In these cases there should be a radical excision of the lachrymal sac in every case of mucocele. In the window-shade case there was recurrent corneal erosion with recurrent corneal bullæ. In this case the treatment was radical scraping of the epithelium with a sharp spoon and the site cauterized with pure carbolic acid, using an occlusive bandage for two weeks, after which the weak sublimate ointment was used at bedtime. When a foreign body has been removed immediately after an accident, the healing of the epithelium will be completed in about thirty-six hours, but if it has been left for over twenty-four hours and there is considerable reaction around the cornea, it is wise always to use an occlusive bandage for about three days. Where the cornea is dull and the foreign body lies in an infiltrated area, there is sufficient chance of an iritis to justify the use of atropine, which will overcome any tendency to iritis. Both these cases made good recovery without any scar.

812 Park Avenue.

OCCUPATIONAL DISEASES OF THE EYE*

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TODAY the trend of all progress is toward conservation, and in medicine that means prevention. So in the consideration of occupational diseases of the eye the prevention of disease is paramount.

The divisions of this subject may be classified as follows:

(1) Diseases due to eyestrain.

(2) Diseases due to the entrance of poisons in the body, or into the eyes.

(3) Diseases due to excessive heat and light.

(4) Diseases due to injuries.

In the first class is nystagmus, an oscillation of the eyeballs, rotatory chiefly. This is due to a constant strain of the elevator muscles of the eyeball and so may occur in several trades, but is mainly found in miners, especially coal miners, about five per cent. of whom are affected by it, and it is due to their constrained position during work, stooping or lying on their backs, combined with poor light. Resting the eyes frequently by turning them downward below the horizontal meridian will relieve the condition, but it requires complete change of occupation to effect a cure.

Reflex symptoms, hardly to be called diseases, are so common as the result of eyestrain due to errors of refraction and to muscular imbalance that it seems almost superfluous to enumerate them: Headache, especially frontal and temporal, eyeache, blepharitis, conjunctivitis, styes, chalazia, chorea, minor epilepsy, neurasthenia, vertigo, nausea. These can properly be called occupational whether they occur during school life or later in life, because they are due to improper use of the eyes added to existing tropias and phorias, and therefore are preventable to a large degree.

Any occupation which requires prolonged use of the eyes, especially at the near point, and such trades and occupations are multitudinous, may cause these reflex symptoms which would not have

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developed had the patient been living on a farm, for instance, and only using the eyes for distant vision.

The cure for these conditions is in fitting the eyes with proper lenses for the correction of the ametropia, or by the exercise of the muscles with prisms, or even by operative measures on the muscles, but the prevention of these troubles is far more important.

A near-sighted person should not work at any trade requiring close application at the near point—such as engraving, proofreading, typesetting, watchmaking, silversmith—for fear of progressive myopia, and later the destruction of vision.

The light in all offices should be so arranged as not to cause alternation of shadows and bright spots; gas light is preferable to electric light and if the latter is used it should be properly shaded, green reflectors being the best; and arc light is preferable to incandescent light, while the newer white light produced by prismatic bars or holophane reflectors is the best of all artificial methods of illumination. Daylight of course is to be preferred wherever possible.

The paper used in offices should not be glazed, and in all work requiring close application at the near point one should become accustomed to lifting the eyes from the work at intervals and resting them by looking out of a window to a distance, this being more restful than merely closing the eyes.

And here, I think, we may properly discuss the problem of the eyes of school children. In most large cities we now have a fairly adequate supervision of the school children by physicians, who periodically examine the eyes of all the scholars, and if any gross errors of refraction are found, such children are referred for treatment. I think it would be wise if all children should be thoroughly examined before admission to school. If pronounced hyperopia is found, strong lenses should be prescribed at once to prevent strabismus, the development of which condition is nearly always due to the act of convergence in high degrees of hyperopia, and if not corrected early, function is soon impaired in the squinting eye. New York City has started a school for pronounced myopic children, who are badly handicapped if taught under the same conditions as those with normal sight.

School children should use pen and ink instead of lead pencils, and the old slate and slate pencils should be forever discarded. The arrangement of the light in the schoolrooms is of great importance,

also the independent adjustments of the desks for each scholar. In order to get sufficient light there should be window space in proportion to floor space of one to five. Blackboard instruction should be used whenever feasible in preference to work at the near point, and there should be less study at home for the younger scholars. Text-books should not be printed on glazed paper, and the type should be sufficiently large—No. 10 Jaeger.

Toxic amblyopias, due to the inlet or absorption of poisons in the body or the eye:—

Dinitrobenzol, which is used in the manufacture of explosives that are used in mining, gets into the body through the vapor during grinding and mixing.

The fumes of bisulphide of carbon, which is used in making rubber, are poisonous, but this is less used than formerly, extreme heat being now used in vulcanizing rubber.

The absorption of nicotine powder in tobacco factories has been the cause of the well-known tobacco amblyopia, it not being necessary to use the weed to become poisoned by it.

Proper ventilation in the places of their manufacture or their use is the keynote in the prevention of these conditions.

Wood alcohol used in varnish, especially in brewers' vats, has caused some of the dangerous symptoms such as are found in the severe amblyopias due to the use of this drug or poison in drinks.

The aniline dyes as used in some trades have caused poisonous symptoms in the eyes, and so has arsenic in paperhangers and painters.

There are over one hundred occupations in which lead is used and might cause lead poisoning, but this is especially found in plumbers and painters, and the eye symptoms are found only in chronic cases, never in acute lead poisoning, as they are due to a sclerosis of the arterial vessels. Lead may also cause a palsy of the ocular muscles.

These toxic amblyopias are usually a retrobulbar neuritis, or an optic neuritis, or atrophy, and are very intractable to treatment.

When we learn that the temperature of a cast-iron furnace is from 1800 to 2000 degrees F., and of molten metal 2700 to 2800 F., and a Bessemer steel furnace from 3,000 to 3,500 F., and that in electric welding the temperature goes as high as 12,000 F., or even higher, we can only wonder that the eyes of laborers in such trades are not more frequently affected. Silver burnishing comes under this head

also. It is impossible to work safely near a forge or furnace where the temperature is over 2,000 F. and the dazzlingly bright lights produced by such molten metals without the protection of blue or red lenses.

In electric welding the work is done with the operator looking through a screen of blue and red glass combined in three or four thicknesses. The effect on the eyes of such heat and light is locally on the lids as burns, the same on the conjunctiva and cornea, and less frequently there is permanent injury to the retina or optic nerve.

I have seen severe granular conjunctivitis and its following keratitis as the result of the heat used in vulcanizing automobile tires.

Sudden transient blindness, especially hysterical, has often followed flashes of intense light from furnaces and in electric power houses, and real injury to the lens or retina may result therefrom.

Glassblowers seem to be especially subject to cataract due to heat so close to their eyes constantly.

X-ray operators in giving treatments usually protect their eyes with a lead glass screen, although claiming there is no real danger. However, in giving treatments near the eye, the eye is protected, or should be, by lead foil or lead glass for fear of burns, although skiagraphers claim that the cornea will not burn any more quickly than the skin, so they take their photographs of the eye fearlessly. I had one case of severe and long-lasting granular conjunctivitis following frequently repeated x-ray treatments for goitre where the patient's eyes were not protected.

The occupational diseases of the eye that are after all of most interest, both from the standpoint of the social economist and of the oculist, are the injuries. These injuries range from small particles on the cornea to penetrating wounds of the eyeball, and in the latter class, even with the use of the electromagnet, the eye is so often useless or infected and a menace to the other eye by danger of sympathetic ophthalmia that enucleation is necessary; therefore all attempts at more adequate protection should be warmly supported. It is estimated that about four per cent. of all cases of total blindness in the world are caused by sympathetic ophthalmia.

The character of these injuries varies from those produced by blunt blows—ecchymosis of lids, subconjunctival hemorrhage, hemorrhage into the orbit, orbital cellulitis, hemorrhage into anterior or

posterior chambers, rupture of eyeball or crystalline lens, dislocation of crystalline lens, traumatic cataract, iritis or iridocyclitis, hemorrhage into vitreous, detachment of retina, deep injuries to retina or optic nerve. Blows with sharp instruments may cause cuts and lacerations of varying depths, penetration of eyeball, either with or without retention of the foreign body.

The trades in which these injuries are liable to happen especially, and do occur so frequently, are foundrymen, machinists, borers, boilermakers, smiths, polishers, puddlers, casters, glassmakers, agricultural workers, in all the building trades, in quarrymen, laboratory workers, glassblowers, in dynamite factories, in mining, and in railroad construction. The most frequent injuries to the eyes in males as shown by collected hospital records are from steel or iron particles or pieces, at least fifty per cent., and about fifteen per cent. are from burns and scalds, industrial (occupational) injuries.

The continuous dust and small particles in tool grinding and in using emery wheels causes conjunctivitis and keratitis, sometimes quite severe, because the workers are exposed constantly, and the large majority of these could be prevented by wearing protective glasses, large circular curved (toric) lenses, either plain or with the proper refractive correction of the laborer, or a large flat lens with gauge wire around it.

The use of cheap tools and hammers is a frequent cause of injury, especially in chipping castings. In brass turning the particles seem even more poisonous to the cornea than iron or steel, copper less so.

It is really surprising how few wounds of the cornea caused by foreign bodies lodging there become septic when we think of the way many of these particles are removed at the shops without any attempt at asepsis, and the cornea is apparently so often severely gouged in vain efforts to remove them. Possibly the fact that these particles, being so frequently hot sparks, or heated by friction, help to make the wound aseptic by heat. It would be wise for all shops to keep on hand a spud with an iridium-platinum point, which could readily be rendered aseptic by passing through a flame and then dipped in alcohol. One of the largest steel companies in the United States have an iron-clad rule prohibiting the removal of foreign bodies from the eye by fellow employes; they must go to the infirmary attached to the plant.

Some protective measures that are in use, but not generally enough, are pneumatic fans at grinders' wheels, shields on these wheels and on circular saw lathes and other forms of rapidly revolving machinery. Pneumatic chippers have reduced the chances of these injuries and so has chipping against a screen (wire mesh or burlap), both in iron and stone works, which helps to protect the passerby and adjacent laborers, but the use of the eye protector of some kind should be compulsory. It is important that the cost of such protectors should be moderate and the sight of the workman must not be interfered with, so that glass is not very practical in iron workers, as it would get chipped and scarred. One shop I visited keeps glass blocks on hand ready to replace quickly the scarred ones. Mica clouds quickly. Gauze wire eye protectors can be used by stone cutters. Aluminum gauze wire, which will not rust, is probably the most serviceable. Let the frame fit the face closely around the eyes, but the wire bulge forward to give free play.

The dangers from stonecutting are practically the same as in the metallic trades; dust and small particles all the time, and large pieces of stone frequently. Screens and eye protectors will help here also. The frequency of burns from molten metal and sparks can be reduced by the same protectors. Coal miners and quarrymen are frequently injured by flying stones and by explosions. Farmers in hedging and chaffcutting often get corneal injuries.

The lime burns of masons, plasterers and bricklayers must not be overlooked. These are not so much due to the heat of the lime, but are chemical burns followed by infiltration of insoluble calcium into the cornea and other tissues. Acid burns are not so dangerous, as the acids harden and contract the tissues.

The bursting of bottles in the manufacture of aerated waters, and the bursting of steam gauges have caused serious ocular injuries. Weavers get hurt by flying shuttles and could be protected by wire mesh guards between the looms.

In addition there are numerous less frequent possibilities for ocular injuries in many trades. I have heard of vanadium poisoning, but little known; and I had one case of conjunctival infiltration with partial temporary loss of vision from the fumes of osmium in electrical manufacture.

It will be of interest to note that the United Steel Company has

reduced the number of eye injuries in their shops fifty per cent. by recent protective measures. Also that, according to the twelfth census, there is a lessened number of blind people in the United States, and I think part of this decrease may be attributed to greater care in shops, as well as to the more rigid use of Crede's method of preventing ophthalmia neonatorum.

In visiting various industrial establishments in or near Phildelphia and in some very extensive reports received from more distant plants, it was gratifying to note the amount of attention being paid to protective measures for the employes, and it is well to note that this is more so in the larger plants, where active campaigns for accident prevention are in force.

Warning signs are abundant, especially the ones in regard to the use of goggles. Large legible signs in all languages warn the men of their danger and of their duty to themselves and to their fellow employes.

The goggles mostly used are the "Saniglass," and these being well annealed do not break as easily as those made from scraps of glass as used in some shops. In the welding departments double glasses of red and blue are the only adequate protection. Glass shields over emery wheels and wire screens interposed between several sets of workmen are much in evidence.

Making factory work safer is profitable as well as humane, although workmen resent efforts made for their protection and refuse often to submit to the adoption of precautionary measures, using them with reluctance. The knowledge of the means of protection is rather broad, but its use or enforcement is restricted. It should be more compulsory. One large plant has posted at the door where men apply for work that if the man does not care to obey orders for mutual as well as individual protection he need not apply, and this company does enforce its rules. Most shop accidents are due to carelessness and disregard of shop rules. There has been considerable difficulty in securing the necessary co-operation of the workmen in preventive measures. There must be more education of the workmen as to the results to themselves and their families of injuries, and of the percentages of injuries in their occupations and simple explanation of the methods of prevention, and finally, suitable laws enforcing the use of such measures of prevention.

Workmen should not be allowed to work at hazardous occupations with defective vision. The mere fact of getting something in the eye while not of necessity causing injury to the eye, does interfere, if only momentarily, with the vision, and so may easily be the cause of bodily injury. Accidents often result from insufficiently lighted shops and this is usually in the smaller shops.

While the loss of a man's eye does not necessarily impair his earning capacity it does increase his difficulty in finding work.

The new workmen's compensation laws, which automatically assess damages for injuries received while at work, are taking the place of the older employers' liability acts, and these have brought more forcibly to the attention of employers everywhere the advisability for the sake of their own pocketbooks of better protection for their employes.

Railroads are instituting strict inquiries into the acuity of vision of their men, especially in their operating force, and discarding those employes who are a menace to themselves and their passengers. For their future protection, some large corporations keep records on their employment books of the vision of their men when first employed.

Humanity and good economics go hand in hand. Therefore we should have the hearty support of the business community, employers and accident insurance companies in our efforts at lessening occupational diseases of the eyes.

1807 Chestnut Street.

SINUS ROENTGENOGRAPHY*

H. M. Beebe, M. D.,
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SINCE coming to Chicago with what I supposed was original work, I discussed the matter with a man in the same line; he pointed out an error in my technique and hence I am not going on record as saying that it is original.

Too many of us forget that an x-ray picture of a sinus is merely a shadow picture with the shadows varying in density. We have to make our diagnosis by interpreting these shadows; if it were possible to show more than shadows our diagnosis would be simplified and more accurate. A sinus that is chronically diseased will give the heaviest shadow, and hence the best picture. There is no technique known by which more than one set of sinuses can be taken, with any degree of accuracy, on one plate. The fact must be borne in mind that there is in every picture considerable superimposing of shadows of equal density, which obscure our understanding of the condition present. The same thing is true of pictures of the mastoid. Of the sphenoid there is no technique known which will eliminate the superimposed shadows. We have tried various positions to see what could be done. We tried the anterior-posterior position with the chin and nose just touching the plate and got some clear views, especially of the antrum. We tried in this way to get the antra, the ethmoid and the frontal sinuses on the same plate; the difficulty was the superimposed shadow of the petrous portion of the temporal bone.

With the mastoid we tried eliminating one and leaving only the other on the plate, but found it obscure when we came to interpret the results. We have continually to realize that an x-ray picture is only a shadow picture. Normal antra will give dense shadows which are added or super-imposed upon the shadows of what you are after and obscures them.

In looking over the literature and examining numerous reports in order to get some light on the interpretation of the pictures, I find that the density of the shadow of a sinus is not so indicative of patho-

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logical changes as is a change in the outline of the sinus.

A change in the sinus outline is of more value than variation in the density of shadows. This is particularly true of the antra; not so much so of the mastoid outlines because of the cellular structure of the latter.

As far as the ethmoid is concerned I believe that it is impossible at present with any known technique to get a picture of it that can be given any useful interpretation; accuracy of diagnosis is not possible here. I have seen a number of cases where the plate was interpreted as showing ethmoid trouble where the trouble really was in the frontal. It is hard to tell the exact nature of the trouble in the sinus by the x-ray plates.

We can see that there is a change, but we cannot tell the exact nature of that change. An acute inflammatory change will give a normal picture, for not enough difference in the shadows is discernible. To see anything abnormal there must have been enough inflammation to change the sinus outline. The conclusion of the whole matter is that we must not allow our imagination to work too much in the interpretation of the x-ray plates. If we always bear in mind that such a plate is simply a picture of shadows of varying density we will arrive at a true interpretation.

George W. Mackenzie: To whom did you refer in your remarks as correcting your technique? Was it Douglas Macfarlan?

H. M. Beebe: No, sir.

George W. Mackenzie: He is trying the extended chin position; I have seen some of his work and the plates he exhibits are excellent. In what I saw of his work the shadows and the outlines of the cavities were so clear that a positive diagnosis is quite probable. I have a case where it was impossible for me to make out whether the patient had sinus disease or not from clinical symptoms alone. He had been operated for pan-sinusitis by someone else before consulting me. Because of a septal deviation the left nasal cavity is very large and as a result the patient suffers considerably with a free muco-purulent discharge with crusting. I had him x-rayed by Dr. Barker, of Philadelphia. He made seven plates in various positions, but they were all negative as regards the sinus. I have been unable to derive from them anything of value suggesting sinus disease. Some of his symptoms were no doubt due to the too wide opening of the nose. A proof

the fact that this patient was suffering less from sinusitis than from the excessively wide nasal space on the left side, the result of the numerous operations upon his sinuses, was established in my mind when it was found that the simple procedure of partially stopping the left side with cotton resulted in a marked improvement in his symptoms and diminution of secretion. I wish to congratulate Dr. Beebe on his excellent talk and demonstration.

W. H. Phillips: The doctor did not state whether he made a single plate or stereoscopic plates. For the last five or six months my x-ray man has been making me double stereoscopic plates and I consider them one hundred per cent. better than the single ones on account of the increased accuracy. The old single plates are sometimes difficult to read where the sinus is not clearly defined from overlapping shadows. I have had single plates and stereoscopic plates made of the same case, and where one could not be read at all the other cleared up the diagnosis perfectly owing to the perspective that it gave.

H. M. Beebe: I would not consider the evidence of x-ray plates when pitted against clinical evidence. If they are confirmative, all right, but the clinical evidence is of the most value. Suppose a case of virulent streptococcus infection in the nose cavities with its attendant symptoms in which the x-ray plates are negative or show an apparently normal condition, I would not consider the x-ray evidence of any importance whatsoever.

I have used the stereoscopic plates and they do give a more natural perspective and also a different view of the sinus changes. But they fail on giving a more definite outline, which I consider the important feature of x-ray diagnosis. I fail to see their value on that account. The sinus outline is the only thing to be depended upon. Hence the stereoscopic plates, while they give a better perspective, fail on the important thing—the most important thing of all.

SOME OBSERVATIONS ON OPHTHALMIC TEACHING*

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THE keen desire to know accurately concerning all sorts of scientific phenomena causes the average student among the laity to quiz quite minutely into the sciences dealing with life. A mind once quickened into investigative activity becomes enamored in its quest for new ideas and is apt to pursue to the limit all that is known about every subject within its intellectual horizon. Nor is such a student satisfied with this; he even dares to pierce into the unknown and occult in search for possible hidden secrets. His mind becomes so alert and expectant as to snatch away new truths which may entirely escape the attention of the conventional investigator. For this reason professional men are not infrequently startled at the knowledge and judgment of their patients. The current magazines and scientific journals, which are so eagerly read by the laity, are giving inklings of professional knowledge which, when elaborated in the untrained mind, may lead either to serious consequences or to healthful inquiry. In either event the general physician is confronted with a flood of questions which he is supposed to answer intelligently even if it be to a non-comprehensive mind. If he fails, he loses the respect and confidence of his patrons. These inquiries are especially forthcoming along the eye, ear, nose and throat interests.

The vital value of functional perfection in the special senses is now recognized by all alert educators. Parents are incessantly instructed, urged and warned concerning the future welfare of their children by their educational guardians. Naturally they turn to their physical advisors for advice as to the proper course of procedure. Unless he be keen in diagnosis in these cases and wise in his advice, the doctor will decline in influence with his constituents and in his community. A safe advisor is always an appreciated citizen.

This means, then, that a more or less critical knowledge of the special senses should be possessed by every general practitioner. It does not necessarily mean that we make specialists out of every physician. If I am a good accountant, stenographer or engineer, it

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does not mean that I must necessarily pursue that calling, but it generally means that I am better qualified to do any other work because of this knowledge, especially if it be collateral in nature. Likewise in the physician, a keen knowledge of all the specialties tends to fortify him the more strongly in his mastery of the body as a whole.

The allotment in time required of the present medical student is sufficient to secure for him a thorough groundwork in these specialties which formerly were given but passing notice. In industries, the apprentice must become so expert in every department as to be able to assume charge of any part upon his completion of the whole. Why not so in medical training? The times are increasingly demanding expert special advice from the general physician and the college must not fail him in his equipment.

The frankness with which the average physician acknowledges his ignorance of eye maladies is as salubrious as it is pathetic. It is often a fact that he has never attempted to apply his theoretical knowledge along this line and therefore most of it has evaporated. However, much of his surgical education, even to technique, has remained with him and stands constantly as a basis for competent judgment in regard to its procedure, even without practical application of the same. Why this variance with his appreciation of eye and ear diseases? Is it not ascribable to the fact that surgery has been drilled into the mind so thoroughly as to make it indelible while our subjects have received quite superficial attention? All education, whether for cultural or practical value, should be thorough, and that which pertains to the special senses, because of their great value to the well being of mankind, has every reason to be the most exacting.

It is not my desire nor within my province to attempt to outline any course of instruction in these special lines. We have plenty of abler men in opportune surroundings who can do this. Neither do I suspect that much radical change is necessary in the average curriculum. But it does seem to me, as indicated, that there is need for great thoroughness and intensity in teaching these subjects to the undergraduate medical student in the majority of colleges. The general practitioner stands on picket duty to detect any enemy, in any form, attempting to invade any part of the physical organism, and to deal with it either personally or by referring it to one who has qualified

for special skill in the particular line involved. This is not a mean nor humble task; it requires the very acme of alertness and wisdom. The guide-post directing us toward Wellville is quite as important as the road leading us there. Again, the general practitioner is the guide who leads humanity around thousands of imminent pitfalls; a much sublimer task does he perform than the transient specialist who may rescue an occasional unfortunate, who may have fallen into the abyss. When the general physician, therefore, acquires a keen conscience, one easily touched by the ultimate direful results following the neglect of abnormalities, he will be more alert in recognizing and more aggressive in combatting them as they appear.

Again, most any physician may be called upon to make a systematic inspection of hundreds of pupils in the schools in the town of his choice. This generally falls to the lot of the recent graduate whose time is less engrossed and therefore less valuable in the earlier years of his practice. Unless he be taught quite technically in the simpler eye and ear tests, he may make far-reaching blunders. His decisions may establish a false sense of security in the parent of a child whose abnormality the inspector may have overlooked. Better to have no special guard than to place one's confidence in an incompetent one. Have you found any such in your community? The best all-around diagnostician that the community possesses should be placed into this position and he should receive adequate compensation for his services. The average up-to-date physician, however, meets the present requirements quite effectually save in the matters pertaining to the special senses. For greater proficiency in these lines, let us look hopefully to future graduates.

Many of us have availed ourselves of the opportunity of frequenting schools in which our specialties alone are taught. It is with profound gratitude that we remember the kindly interest taken in us and the painstaking efforts there put forth for our improvement. With the highest respect, do we presume to comment upon their work.

In educational institutions, as in individuals, there can be little progress where there is little initiative toward original investigation. The rapid strides constantly being made in medicine and surgery require a continual readjustment of viewpoints and a like uncertainty in accepted conclusions. In order to form tenable judgments in any science it is essential that there be a large amount of accurate data

carefully collaborated and logically arranged. This in the practice of medicine means the collection of a systematized list of case-histories which show the conditions presented at various times, under various circumstances and under varied treatments. Deductions then can be made which prove to be an invaluable historical experience and serve as a basis to the possessor from which he may obtain a far-reaching outlook. He has a definite idea of what is valuable or futile in diagnosis and treatment as far as present knowledge obtains, and he can the more clearly discern promising avenues for further investigation. Most of the foreign institutions have a marked advantage over us along this line. Many questions which to us are yet *sub judice* are to them permanently settled and acted upon. This gives to their teachers a sense of certainty in dealing with most conditions that assures the most positive instruction. Settled facts are generally easily comprehended and readily remembered; uncertain conclusions are disconcerting and impracticable. Anything, therefore, that leads to definiteness and positiveness in teaching is very valuable.

We need in our country some plan by which the teachers in our special schools may have sufficient compensation to permit them to devote their best attention to the problems of teaching and of medical investigation. What would you expect in proficiency from a teacher in any other educational line who was compelled to spend most of his time during each day farming or laboring in some other vocation in order to make a living? The requirement of a certain number of all-time service men in the general medical colleges has already proven most valuable in efficiency. As long as the problems of making a living engross and hamper the mind, there can be little effective energy spent upon problems of life. In most of the countries abroad, the state asssures to the professors in charge of its institutions a competence as well as authority which permits them to organize and manage their coterie of assistants fearlessly, in accordance with the most effectual plans. They can determine upon a line of investigation and pursue it to its limits, whether it proves commercially valuable or not. Their vision is not obscured by clouds of want and their ardor waxes bold in their zeal to know.

In refraction work the eye specialist comes into a certain amount of unsavory competition. The optician who presumes to refract eyes assumes, perhaps inadvertently, the role of the ignorantly blissful char-

acter. There are many vital facts making for safe refraction which he knows not and knows not that he knows not. He does his best and thinks it as good as the rest. He may even presume to attempt to substantiate his slip-shod work by ridiculing the cautious care of the oculist. He flings his unprofessional judgment wantonly before the public in opposition to cycloplegics, and may catch even the unwary physician by his plausible arguments. Perhaps the oculist is somewhat to blame in this by failing to proffer a proper amount of fortifying information to these general practitioners, who should know and yet can scarcely be expected to know concerning the detailed functions of the eyes. The prospective oculist needs to be taught scientific refraction. The philosophy of his work must be in evidence. He must have a definite conception of the possible needs of the eye and exhibit intelligent means of supplying the same. He must be able to secure in an acceptable manner the normal visual acuity or be able to explain why this in a particular case is impossible.

In my mind, we can find no better philosophical as well as scientific teaching in refraction anywhere than in our own American schools. In London may be found an abundance of material and a number of expert surgeons; their teaching is lucid and inspiring, but their requirements did not seem to me to be as exacting as the American teachers and patients demand. The same to a more marked degree applies to the teaching of refraction on the continent. They think we are fastidious and unnecessarily exacting in our care of refracting our patients' eyes; they fail to discern the peculiarly incisive temperament of our people which remains unsatisfied until the best is secured.

These are a few observations which have haunted my mind. The one who knows the least is apt to be foremost in giving advice. Truths, moreover, are generally too unwieldy to be handled by single minds; perfection is reached by securing the resultant of many combined mental forces. That we may concentrate our efforts for the advancement of medical education, and thus, to a certain extent at least, realize the visions of scientific perfection which we possess, is the wish of the writer and his only excuse for submitting this unworthy paper.

DISCUSSION

R. S. Copeland: To my mind this paper is very worthy of discussion. American medical education has not found itself until very recently. It is a subject close to my heart and I am glad to hear other

men's views. It is helpful to us who are in teaching institutions to know what those in practice think about it. The truth comes out in perfection as the resultant of many angles of vision. Vaughn, the President, or recent President of the A. M. A., presented a paper on this subject which was discussed by a committee of ten. It was their idea to bring up the clinical aspects of medical teaching. They were endeavoring to present an ideal plan.

I was much interested of course in hearing what was said about our specialty. It is the conviction of this committee that our specialty should not be brought up until the Junior year. Then the students should begin on their specialty and the out-patient department of the institution is the only place where this specialty can be properly taught. There should be found abundance of clinical material which if properly utilized would admirably serve the purpose. The Junior student, as clerk, should take histories, and as actual assistant in the clinic could take part in the operative and therapeutic work of the institution. In no other way could the subject of eye, ear, nose and throat troubles be taught so well so that the practitioner could recognize them and at least do no harm. It is a perfectly fair criticism to say that our schools have not risen to the proper level on this subject.

F. C. Sage: Please give us an idea of the extent to which refraction work should be taught. That is, I mean, to the ordinary physician.

I. D. Metzger: It was not my purpose to dictate or to be dogmatic. The most important idea that I tried to introduce was the matter of intensive teaching. Every school does good teaching, no doubt, but more intensive teaching in most is needed. The general practitioner should understand the tests for visual acuity and, in a general way, how defects may be corrected. In many instances the recent graduates know this, but few of the older ones do. It is surprising to see the half-hearted way in which physicians will admit the need of specialists. Many claim that opticians are not so bad as they are made out to be. That is because the general practitioner does not understand the affections of the eye as he should.

Time and time again we see pupils passed by inspectors as normal when they are afflicted with more or less severe hyperopia. The inspector says the child is all right, or, that certain care should be sought. The family physician in turn says that he cannot see anything wrong with the child and so it brings one of them into ill repute. Such an unfor-

tunate state of affairs is due entirely to the fact that general physicians are not acquainted with certain detail conditions about the eye which they ought to know. We do not want to make specialists of the general physician, but we want to make him able to say when a specialist is needed and when it is unfair or unsafe to the child to let its maladies pass unheeded. We want to make every physician able to be a good, safe advisor.

DISCUSSION OF PAPER NO. 19, "THE CLINICAL VALUE OF LABYRINTH TESTS." BY G. W. MACKENZIE (PAPER PUBLISHED IN SEPTEMBER ISSUE).

A. Lewy: It appeared to me that there was one part of Dr. Mackenzie's paper in which there was not given weight enough to injuries of the internal ear, not necessarily associated with fracture of the base of the skull.

It sometimes comes up in medico-legal inquiries; I was interested in the case of a man who had lost his hearing in an accident without basal fracture and the question was to determine whether or not the loss of hearing was due to the accident. The tests described in the paper are of the greatest value to us in determining the exact nature of the trouble. Injuries may also produce rupture of the membranum tympani and then there is no doubt of the cause of the deafness, but we sometimes see cases in which there has been some kind of injury in which the membrana tympani shows no changes of any kind and yet the patient can be demonstrated to be deaf by our special tests. Then we must depend upon these labyrinth tests to determine the nature of the case. These tests will determine whether or not the internal ear has been injured. It has been shown in some cases that there is such a thing as concussion of the labyrinth. The patient died of some other disease and the post mortem demonstrated degeneration of the labyrinth following minute hemorrhages, without there having been any fracture of the skull. The degeneration was due to concussion or contusion of these delicate tissues.

I am merely mentioning this one line of cases because Dr. Mackenzie did not dwell upon them in his paper, or did not put enough stress upon them.

A little girl was hit on the head by a heavy sign falling upon her; it caused an indentation across the occiput. For several days there was oozing of the cerebro-spinal fluid from the ear; there was no disturbance of the reflexes of the eye muscles, nor could I determine that there were any changes in the fundus. The blow, severe as it was, had not rendered her unconscious; she was dazed but not unconscious. There was a jagged tear through the membrana tympani.

I wiped out the canal with the greatest possible aseptic precautions and tamponed. She made a good recovery with the exception of the hearing, which was considerably reduced; according to the tuning fork tests there is a mixed deafness.

In cases of injury in which there is some hearing left a diagnosis between internal and middle ear deafness can be made by proper tuning fork tests. The mere fact of hearing being left after an injury makes it improbable that there has been fracture of the skull through the internal ear.

W. M. Muncy: A patient came to the office recently with the following history: Some eight to ten years ago he had fractured the base of his skull in a railroad accident with the resultant complete loss of hearing on the right side. Two months ago he had retired in apparent good health, but woke in the morning with complete deafness of the other side. What relation had the second attack to the first, and would an operation on the right side probably have prevented the destruction of hearing of the left ear? Fractures of the base of the skull but seldom are seen by aurists and there is no doubt that, as shown by Dr. Mackenzie, the mortality can be materially reduced by such procedures as he has so clearly outlined.

Julius Grinker: I enjoyed Dr. Mackenzie's paper very much. My reason for being here is that I want to learn something, not talk about it. The subject is timely and a knowledge of the facts as presented by the speaker will be of great value to me in the study of basal fractures. Several years ago I saw three cases of fracture through the petrous portion of the temporal bone, with resulting deformity and facial paralysis. After an examination I advised against surgical interference. All three are deaf today. Had I known what Dr. Mackenzie has tried to teach us of the clinical value of the tests that otologists can make, these patients, or possibly one or two of them, might have their hearing today. In the future I propose

to call in an otologist to go over such cases with me. From time immemorial the general surgeon has been taught to let basal fractures alone and this kind of teaching has guided us too much. The better judgment may be to operate upon the ear in many of these cases.

Another point that the speaker has impressed me with is that in cases of cerebellar abscess we must have the assistance of the otologist. I plead guilty of the misdemeanor of not having consulted otologists sufficiently often, nor having paid adequate attention to the labyrinthine tests. Since Dr. Mackenzie and others of his caliber have taken up the subject of labyrinthine diseases there are a number of otologists capable of making these tests who may assist us in the diagnosis of cerebellar cases. I have seen a good many cases of cerebellar disease in the Cook County Hospital and I confess that I have not availed myself of the assistance of the otologists as I should have done. General surgeons, too, if they are going to perform operations on the cerebellum should know more about the ear, or should avail themselves of the services of a good otologist.

In conclusion I wish to state that to get the best results we should all co-operate—surgeon, otologist and neurologist. Thus may we help patients get well that would otherwise perish or remain disabled.

George W. Mackenzie: I thank the gentlemen for their liberal discussion and Dr. Lewy in particular for referring to cases of concussion of the labyrinth; it was an oversight on my part not to have included it in my list. There are cases of concussion where there are minute hemorrhages similar to those found in the spine in what is called railroad spine. I do not mean the fake railroad spine but the real. The organ is really injured as the minute hemorrhages show. At one time the diagnosis of railroad spine was very common; I think that there are fewer such diagnoses made now than formerly owing to the more accurate methods of diagnosis. Some cases of so-called concussion are really fractures. Others are not fractures and the diagnosis can be definitely made by more careful functional examination of the hearing and static functions by the skiagraph.

ABSTRACT

Intranasal antrum operations, with report of ninety cases. H. McNaught, *J. A. M. A.*, September 4. Quite a discussion was apparently precipitated when Dr. McNaught reported conclusions of his antral work in a paper read before the section of Lar. and Otol. of the A. M. A. He favored the intranasal method of treating the chronic suppurative antrum after the method of Krause of destroying the nasal wall of the sinus. Dr. Kyle, of Los Angeles, questioned the number of cases reported since the work covered only a three-year period; others sustained Dr. McNaught in the greater frequency of antral infections than commonly supposed. The reviewer recalls the report by G. P. Tunis in the *Laryngoscope*, October, 1910, in which the conclusions of a forty-five page article on autopsies in the Vienna General Hospital (a study of unselected heads a few hours after death) are as follows:

(1) Thirty-seven per cent. showed some evidence of pathologic changes in the maxillary antra; thirty-seven cases of the one hundred examined.

(2) Eleven were examples of edema.
Twelve were examples of edema.
One alveolar or dental cyst.
Thirteen retention cysts.

(3) With one or two exceptions all these cases were undiagnosed during life.

(4) Presence of a large amount of pus in ten out of twelve of these cases of empyema may have played an active part in causing the death of the patients.

(5) In this series there was no particular disease with which the inflammatory conditions of the antra were associated.

(6) The cause of death in twenty-one out of the one hundred cases was tuberculosis, either of the respiratory or intestinal tract. Nevertheless, there was only one example of a tuberculous condition of the antral mucous membrane.

(7) All cases of retention cyst were associated with a mild form of chronic atrophic catarrh.

Dr. McNaught seems well supported in the suggestion this discussion gives of the greater frequency of antral troubles than we suppose. DOUGLAS MACFARLAN.

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Whooping cough. The infectiousness of the paroxysmal stage, like that of the scales in scarlet fever, seems to have been unduly exaggerated. The fact that the Bordet-Gengon bacillus has been most often found in the sputum of the catarrhal and rarely later than the first week of the paroxysmal stage, points to the early part of the disease as the most infectious; it would hardly seem to be necessary for the child to be kept in the house for more than a week after the whoop appears. Luttinger (*N. Y. Med. Jour.*, May 22) thinks the patient may be allowed out-of-doors from the beginning if accompanied by a competent guardian who takes care to collect the expectoration in a paper bag to be subsequently burned, and sees to it that the child does not whoop or sneeze in others' faces. (*Med. Rev. of Rev.*, August.) To which we would add care against carrying the infection by the hands. J. L. M.

NEWS ITEMS

The American Medical Editors' Association held a most successful annual meeting in New York City, October 18 and 19. Dr. Edwin Lewis, editor of *American Medicine*, presided. More about the transactions and suggestions given for the improvement in American medical journalism will be told, as occasion arises, in future numbers of this JOURNAL.—ED.

Dr. G. DeWayne Hallett will act as chairman of the committee to entertain the JOURNAL Committee during their visit to New York on Saturday, October 23. The JOURNAL Committee is a voluntary one composed of active contributors and supporters of the JOURNAL. It is through their efforts that the JOURNAL is about to close a most successful year. Everyone is interested in the welfare of the JOURNAL is cordially invited to attend these meetings, held two or three times a year at various places, generally in a city where a convention is in session.

Dr. L. E. Hetrick has just been made adjunct professor at the Woman's College and Hospital of New York. Congratulations to Dr. Hetrick and also to the College.

Robert Lippincott Walter, M. D., late of the Walter Sanitarium, announces the opening of "Linden" on October 15, 1915, for the reception of patients, Doylestown, Pa. Dr. Walter continues to give atention to his specialty, ear, nose and throat.

A large ear, nose and throat practice for sale in Philadelphia. Inquire of Dr. Frederic W. Messerve, Perry Building, Philadelphia.

G. H. Galford, of Gibson City, Illinois, is spending the winter in Chicago upon eye, ear, nose and throat and will subsequently locate with Dr. George B. Kelso at Bloomington.

Dr. J. G. Blackburn, who was assistant to Dr. Myers, of Ann Arbor, last year, is taking special work in Chicago preparatory to locating independently.

The Central Illinois Homeopathic Medical Association held its meeting in Champaign on October 26 and a number of prominent eye, ear, nose and throat men of Chicago and Springfield were in attendance.

Dr. Elmer J. Bissell, of Rochester, and Dr. I. O. Denman, of Toledo, attended the meeting of the American Academy of Ophthalmology in October.

THE JOURNAL OF

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CONTENTS FOR DECEMBER, 1915

EDITORIALS

Page

Special Announcement 979
A New Journal 979
The Surgical Congress 980
Flexner's Report on the English Side of Medical Education 981
Announcement 990

ORIGINAL CONTRIBUTIONS

Better Business Methods for the Physician. By Chas. F. A. Hall, M. D. 991
Internal Remedies in Acute Inflammatory Conditions of the Middle Ear. By Howard P. Bellows, M. D 996
Accessory Nasal Sinus Disease a Possible Cause of Suicide. By J. Ivimey Dowling, M. D 1006
Colds: Their Etiology and Treatment. By William H. Phillips, M. D. 1012
A Country Practitioner's Treatment of Colds. By Edward Kirkland, M. D. 1016
Submucous Resection of the Nasal Septum. By Conrad Smith, M. D. 1018
Notes on the Modern Radical Mastoid Operation. By Frederick W. Colburn, M. D 1022
A Case of Soft Cataract: Extraction of the Capsule. By G. N. Seidlitz, M. D 1025
Remarks About Cataracts. By C. Gurnee Fellows, M. D 1028
Glaucoma: A New Theory as to Its Cause and Pathology. By C. A. Harkness, M. D 1037
Successful Removal of a Bullet Lodged in the Region of the Carotid Artery in the Skull. Wm. G. Shemeley, Jr., M. D 1048
Statistical Report of the New York Ophthalmic Hospital. By G. DeWayne Hallett, M. D 1051
ABSTRACTS 1054
REVIEWS 1060
NEWS ITEMS 1062
INDEX 1065

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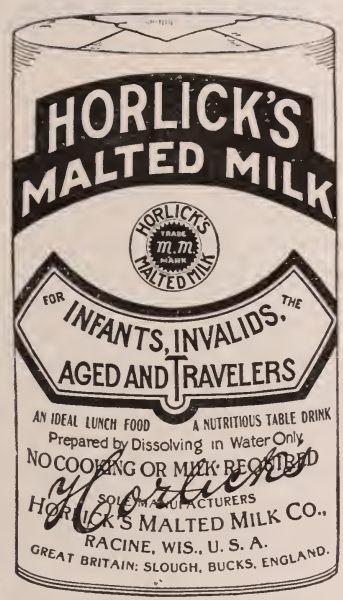
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EDITORIAL

SPECIAL ANNOUNCEMENT.

This issue completes the 1915 volume of the new Journal of Ophthalmology, Otology and Laryngology. The success of the new plan has exceeded all expectations in the production of a journal both in character of material and in make-up and appearance.

It is apparent, of course, that a publication of this size and quality cannot be maintained upon the income from subscriptions and advertising alone, at present rates. The difference has heretofore been made up by the generosity of the associate editors and contributors, who have borne the expense for illustrations, extra pages, etc. Likewise, the sending of complimentary subscriptions by contributors to their physician friends has greatly increased the strength and influence of the Journal. It is now regularly listed among the highest grade of specialty publications and its articles are abstracted with gratifying frequency.

The plans for 1916 are sufficiently perfected to insure its continuation with still further improvement. The subscription for the ensuing year will be at the rate of three dollars per annum, and if the present generous support continues it will be possible to go on issuing at that price a journal equal to any other published at five dollars.

Individual subscriptions and lists for complimentary ones should be sent to the Business Manager by January first wherever possible.

A NEW JOURNAL

The Journal of Laboratory and Clinical Medicine, a monthly devoted to the laboratory and its relation to medicine and surgery, made its first appearance in October, 1915. It is published by C. V. Mosby Company, of St. Louis, and edited by Victor C. Vaughan.

"At present there is a wide chasm between the research man and

the practitioner. The former mines the ore, the latter refines it and shapes it into useful implements. The work of the one (practitioner) supplements that of the other (research man). The world is not benefited nor medicine advanced until the work of both has been done. Modern medicine consists of those facts gathered from the various sciences which may be utilized in the prevention or relief of diseases. Scientific discovery must precede practical application * * *. The basic aim of this journal will be to bring discovery and its application closer together. * * * The Journal will be filled with original articles and editorial reviews * * *. The editorial staff has been selected with the intention of having an expert present with proper estimate the results of the latest scientific investigations.

"The man who attempts to practice medicine without laboratory aid belongs to a past generation, and fails to do justice to his patients or credit to himself. Our purpose will be to present the work of our best investigators to the practitioners, either directly in the form of original contributions or as reviews of work published elsewhere.

"The ultimate goal of science is the domination of the forces of nature and their utilization in the betterment of mankind. In this great work the medical profession must play an important part and it is our one desire that this journal may aid in carrying on this work."

(Signed) V. C. V.

The editor-in-chief, Dr. Victor C. Vaughan, has stated clearly the objects of the Journal of Laboratory and Clinical Medicine, and with the assistance of his capable associates is well able to carry them through. If the first number is a promise of what the journal will be there is no doubt that it will fill an important place in medical journalism.

Here is wishing the Journal of Laboratory and Clinical Medicine a successful career, and may its succeeding numbers equal, if not excel in quality, the first.—Ed.

THE SURGICAL CONGRESS

Boston has recently been the Mecca of surgeons. The clinical material at the different hospitals was abundant and varied, and the attendance taxed their capacity. Our homoeopathic hospitals, the Massachusetts Homoeopathic, the Emerson Hospital at Jamaica Plain, and the Forest Hills Hospital have given over ninety operative dem-

onstrations. Many of these cases were unusual and aroused much interest and favorable comment.

There is no question of the value of these meetings, both to the visiting surgeons and to the operators themselves. Emerson has said, "No matter what manner of man I may meet, of him I can learn something." Undoubtedly the big men did learn something from those of lesser reputation and experience. Operations before our fellows, and sometimes peers, tax the nerve of even the most experienced, but the mental discipline is invaluable and increased confidence and efficiency are the sure outcome of such demonstrations.

The meetings at the Copley Plaza Hotel were inspiring because of the full attendance, the scientific quality of the papers and discussions and the general atmosphere of interest and enthusiasm.

The papers in the present number have been selected to arouse especially the interest of those who are engaged in general practice, but have also given particular attention to one or more of our specialties. The associate editor would call particular attention to the paper on "Better Business Methods for the Physician," by Dr. C. F. A. Hall. This paper is full of valuable suggestions, and should be read and reread.

The American College of Surgeons has been severely criticized by many of its members because of its apparent laxity in admitting those who did not entirely measure up to the high standards established by the directors and originators. It is impossible in so large a body to carry through the principles of this organization without making mistakes. The wonder is that more mistakes have not been made. The whole scheme is on a broad, sound basis, and is being worked out slowly but surely in accordance with the highest ethics of the medical profession.

We must not fail to do our share in promoting the success of this big organization, forgetting sectarian lines so far as possible, and making every effort to promote its welfare. George B. Rice.

FLEXNER'S REPORT ON THE ENGLISH SIDE OF MEDICAL EDUCATION*

In the October number of the *Atlantic Monthly* Abraham Flexner

*Editorial comment on this article will appear in next month's issue of the Journal.

describes the English system of medical education as it is today, with its slight modification of what it was in the earlier days. He points out its strong and its weak points and compares the English system with that of the Germans, and closes his article with a brief review of the American lack of system, on which he offers several important suggestions for improvement.

Since Flexner has investigated this subject most thoroughly, he should be in the position to present it in the most authoritative manner. However, since he is a layman, never having studied medicine, he lacks the advantage of the medical student's viewpoint, for the medical student has the opportunity of studying conditions at the closest possible range and from the most advantageous angle.

That system is the best which gives the best results. That teacher is the best who draws the greatest number of students to his classes. Flexner, in his article, devotes attention entirely to the subject of undergraduate schools of medicine, and his remarks and conclusions do not of necessity apply to the post-graduate systems of medical education. A liberal abstract of Flexner's article, "The English Side of Medical Education," is herewith presented.

"The English medical school is an outgrowth of the English hospital, for it began when the English medical student attached himself to a master whom he followed through the wards. Such additional instruction as the student required—instruction, for example, in anatomy and pharmacy—he obtained in schools that grew up outside the hospital, but in close relation to it. In course of time, the separate masters, coming together, formed a 'faculty,' and their apprentices, being pooled, formed a student body. Thereupon the so-called 'anatomical schools' became part of the hospital schools. But these developments did not affect the character of medical training; in its first stage it was essentially and simply a hospital apprenticeship.

"A second phase belonged to the latter part of the nineteenth century. A group of fundamental sciences had developed out of medicine or in close proximity to it—pathology, physiology, biology, chemistry, etc.; they became parts of the hospital medical school, with such limitations as the organization, resources and spirit of the school enforced. The organization in question consisted of practicing hospital physicians; the resources were merely student fees; the spirit was intensely and immediately practical, as is necessarily the way

with an apprenticeship. Under these circumstances, the so-called laboratory subjects gradually edged their way into busy hospital schools. Their teaching was in the first place entrusted to certain members of the hospital staff—usually the younger members, who still had a certain amount of leisure time. This arrangement soon proved unsatisfactory, for it became evident that, even though the laboratory sciences in a medical school are in the first instance important because they have a bearing on clinical problems, nevertheless, so long as they are taught in a grudging instrumental spirit, they largely fail of even their practical purpose. They cannot, in a word, be effectively taught, except in so far as they are freely cultivated. For this reason much of the teaching of the underlying sciences was in time differentiated and committed to a group of full time teachers. * * *

"From the preceding account it is obvious that the English medical school is today in essence a hospital apprentice school modified by the addition of the underlying sciences, independently taught and cultivated. * * * In the provinces the schools appear to be departments of the developing provincial universities; but only the laboratory subjects form properly organized university departments conducted by the university authorities, as are the departments of mathematics, Greek and Latin. Of the clinical work the universities have only nominal control. The schools are therefore nowhere of full-fledged university character.

"In a recent discussion of the German side of medical education in the pages of the *Atlantic Monthly* (Nov., 1913) I called attention to what seemed to me its characteristic features—the high minimum level of organization and equipment of the medical schools; the admirable secondary school training exacted of every medical student; and the genuinely university quality of the entire faculty. A word as to each of these points. Despite the fact that German medical departments vary in extensiveness and completeness, all without exception possess adequate facilities—laboratory and clinical. * * *; it has at least been a serious education, of uniformly high quality and calculated to develop the student's ability to put forth severe effort and endure hard work.

"Finally, the medical faculty of every university has been assembled on the basis of scientific eminence. * * *, as a rule the competition of universities insures appointments on the basis of sheer scien-

tific performance and promise. The practicing profession and the teaching profession are sharply distinguished from each other; and members of the latter are called from one university to another, as vacancies occur. In these respects laboratory and clinical teachers are on the same footing. They represent precisely the same university type of activity and ideal. * * * To the points just touched on—the excellent facilities, a trained student body, a genuine university professoriat—the German medical school owes its character and its eminence.

"In all these respects, English medical education fares badly in comparison. In the first place, the English facilities are inferior. The English medical school possesses a hospital, to be sure; as we have seen, the medical school grew out of the hospital. And, as a rule, the hospital and its outpatient departments contain material enough for the purposes of instruction. But in other respects the hospital is far from satisfying modern standards. * * *

"Moreover, while the English hospital is a comfortable and attractive place in which to lodge the sick, it lacks the laboratory equipment and staff needed for the critical study of disease. * * * But research laboratories with competent assistants and regular support are well nigh unknown.

"Of the underlying sciences—anatomy, physiology, pathology, and the like—all excellently well developed in Germany and particularly from the standpoint of research, only physiology is as a rule creditably represented in the English hospital school. * * *; on the experimental side there has been, in the medical school, no activity. Modern pharmacology is almost unrecognized. * * *, the somewhat meager facilities and barren outlook of the medical sciences result in a mechanical, stereotyped, disciplinary type of teaching, scientifically uninspiring to both student and instructor. * * *

"Again, the English student body is at once heterogeneous and not highly trained. Secondary education is in Great Britain still in an undeveloped condition. It is only within the last decade that local authorities have been constituted for the express purpose of establishing secondary schools in England. * * * While the secondary school situation is therefore now fairly on the road to effective organization, medical schools have up to this time, for the most part, made on their students only a slight educational demand. The English boy

is still usually admitted to a medical school if he can produce a certificate showing successful examination in four subjects, three of them being languages; English, elementary Latin, and either French, German, Italian or Greek. The fourth subject is mathematics, including arithmetic, elementary algebra, and a small amount of plane geometry. Of the Oxford or Cambridge medical student much more is, of course, demanded for entrance; but even he goes to London for his clinical training. * * * In preliminary training the English students are therefore much less homogeneous and much less competent than the German.

"Finally, the school and hospital staff is from the educational standpoint inferior. * * * The conditions of hospital service have therefore limited the possibilities of scientific and educational development. * * * It was never the purpose of the voluntary hospital to promote medical science; its sole object was to relieve distress. A tradition actually unfavorable to scientific endeavor has in the end been created. Promotion by seniority generally prevails. Young men who can afford to wait—and, therefore, as a rule those only—attach themselves to the hospital service, fairly certain that by assiduous attention to routine they will ultimately succeed to the principal posts. Step by step, as they rise in rank, their association with the prominent physicians holding the chief appointments leads to an increase in private practice which is apt to be increasingly fatal to scientific ideals. Moreover, the hospitals all inbreed. The lower posts are filled with recent graduates, who succeed almost automatically to the leading positions. Men are rarely called from one hospital to another, even in the same town. The incentive which 'calling' offers to the German scientist is therefore almost entirely lacking. The worldly, as well as the professional and scientific, future of the German clinician depends in the first instance on his scientific productivity, for he will rise either in the service of his own university or in the service of some other university only if he has successful performance to his credit. The English medical man has no such spur. Once started on the hospital ladder he is destined to rise if he is assiduous in following his chief and reasonably faithful in the performance of his routine duties. Scientific renown will not of course hurt him, but it is rare and therefore by no means indispensable. Do what he will, only consummate ability will ever be summoned from one hospital

service to the other, and then only under highly exceptional circumstances.

"A certain contempt for pure science or scientific medicine is even observable. One is told that the English are practical people; that it is the business of the doctor to prescribe for his patients; that the practical bearings of scientific inquiry are too often remote from the current needs of the busy practitioner. Demonstrated, tangible improvements are indeed taken up, but these have usually been demonstrated somewhere else. Facilities are not furnished for the purpose of scientific investigation. There is lack of cordiality in the relationship between the staff physicians and the chemists and physiologists who have latterly been added to the medical school staff. Whereas the German university is alive with ideas and with the spirit of inquiry, the English hospital is on this side casual and incidental, precisely as is the practicing profession of the country.

"Thus far the contrast is sufficiently to the disadvantage of the English system. Nevertheless, a highly important counter consideration has now to be taken into account. The German medical faculty began in a university that had been for centuries a lecturing faculty devoted to theoretical exposition. The lecture method, the method of philosophical presentation and elaboration, prevailed in the medical faculty as in other faculties—law, for example, or theology. In consequence, during this entire period, medical thought was completely dominated by metaphysics, and medical education in the university had no contact with disease in the concrete. * * *

"With the development of the laboratory sciences in the university German medicine shook off the metaphysical incubus, and in the laboratories and hospital came into close immediately fruitful contact with disease and its manifestations in the concrete. * * * The transformation of the lecturing and expounding mediaeval university into the modern critical, investigating university, with its seminars, institutes, laboratories and clinics, is indeed an astounding phenomenon. No other faculty has profited so much by the evolution as the medical faculty. No other faculty had so far to go; no other faculty ramifies so widely and so intricately. It is hardly too much to say that almost every advance in physical, chemical and biological science may have consequences for medicine. * * *

"In one crucially important respect, however, medical teaching

in Germany has failed to modernize. The German undergraduate student of medicine is still taught largely by lectures, mitigated though they are by demonstrations and exhibits at which he gazes from his seat in the amphitheatre. Special courses more concrete and individual in character are indeed offered; but the lecture course, the traditional exercise of the mediaeval university, is still the backbone and furnishes largely the bulk of the instruction. * * * Not until the graduated doctor becomes a hospital assistant does he obtain the close and constant opportunity to observe disease in its entire course which should have been his throughout his clinical education. * * *

"It is precisely here that the counter considération to which I called attention enters; precisely at this point—and it is a point of priceless value—the comparison is all in favor of the English method. * * * Laboratories were added for teaching the underlying sciences. But these developments have in no wise altered the character of English medical education. * * * His education has continued to be an apprenticeship—an apprenticeship which has lost none of its advantages, even though it has been more and more systematized in recent years. * * *

"The clinical clerkship, above mentioned, is worthy of more extended notice, not only because it is the backbone of English clinical education, but because it is the only effective method of clinical education ever devised. After approximately a year's preliminary training in anatomy, chemistry and physiology, the student enters the hospital, where he is first taught to notice and interpret the ordinary physical signs, and to make case records. Even before this course in diagnosis is completed, 'clerking' begins. Small groups of students—six, for example, at the London Hospital—are assigned to a visiting physician and his assistant, who have—at this same hospital—a service of sixty beds. Cases are assigned to the students or clerks in rotation. Each clerk is required to make a complete history and description of each of his cases, including the requisite microscopical examinations. For these purposes he has free entry to the bedside. The students' notes, criticized and revised by a member of the staff, form permanent and essential parts of the case records. Ward rounds are made daily. The chief, his assistants and his clerks, move almost noiselessly from cot to cot, conversing in low tones over the patient. At each bed the clerk in charge steps forward, reads his notes, proposes his diagnosis

and suggests a line of procedure. The chief questions, criticizes, offers alternatives, and stimulates a discussion in which presently the entire group is involved. * * *

* * *. "This is the very essence of the scientific attack on any situation. Men trained to pursue this method—representing a combination of interplay of deductive and inductive logic—bring to bear upon a difficulty the most powerful known intellectual solvent. And this is precisely the method of scientific medicine. The modern physician must be an accurate and cautious observer; he must on this basis construct his tentative hypothesis or diagnosis, which suggests a definite therapeutic procedure; and the results vindicate his observation and judgment and send him back to the facts for fresh observation and reflection. The English clerkship furnishes an opportunity for a prolonged training along these lines; for the clerk systematically and persistently carries on his activities in this fashion. * * *

* * * "Professor Dewey has wisely remarked that in education 'the initiative lies'—or should lie—'with the learner.' If training is to develop the pupil's ability to deal with the situations—if, in other words, education means not merely knowledge of, but capacity to deal with—then the student's reactions must constitute the raw stuff out of which the teacher must develop orderly and effective mental processes. That is, the learner must act before the teacher can react upon him. * * *

"Why then does so admirable a method produce, on the whole, unsatisfactory results? I have just intimated the answer to this question. The clinical teachers are practical men, rarely men of scientific vision or enthusiasm. They move contentedly within the area of the known; as the boundaries of knowledge are pushed further, their sphere of operations gradually widens; but they are not themselves as a class pioneers. The students possess certain excellent qualities; they are steady, earnest, reliable. But they lack—once more, of course, taken as a whole—intellectual discipline, maturity and interest. When teachers of the type characterized undertake to train students of this kind, the instruction, while conscientious and thorough, is likely to be uniform, mechanical, cut and dried, uninspiring. Professor Oswald has pointed out the educational significance of doing more than is required. Science cannot prosper on required courses; education in the higher sense lies always beyond the stipulated letter. The German

university is fully impregnated with this spirit. Its pride is its appeal to voluntary activity; it has no use for men who do not seek opportunities to do what no one requires of them. The English medical school, however, offers little or no inducement or opportunity for that free, liberal, irresponsible exercise of the faculties without which neither ideas nor faculties can sprout. Every school offers substantially the same courses; every student does substantially the same things, and spends no small amount of time and energy doing them over and over, so as to be examination-proof. Despite an excellent method the clinical atmosphere is depressing. An apprenticeship can, in a word, rise no higher than its source. Reality of environment, of appeal, of responsibility is not alone for most students educative in a high sense. The real appeal must take place in an atmosphere of ideas, of large interests, if anything more than humdrum efficiency at present levels is to result. At a time when practical co-operative training is coming into vogue, the importance of this point must not be overlooked.

"A scheme usually has the defects of its virtues. But in the case of German and English medical education this is not necessarily the case. The defects of both may be cured without sacrificing the peculiar virtues of either; nay more, the full value of both will be realized only when their present defects have been remedied. And, curiously enough, such remedy requires that the two methods be combined. It would be hard to find another instance in which different methods of pursuing an object really supplement each other as effectually as do German and English medical training; if the characteristic virtues of both are merged in a single method the result, as method, will be fairly beyond criticism. * * *

"In conclusion, a word may be added in reference to American conditions. Of medical education in America, it is difficult to speak in general terms, for it lacks the homogeneity characteristic of other countries. Whatever the respective merits or defects, medical education in Germany, France or England is at any rate always the same sort of thing. This is not true of the United States, where medical education includes something of what is best and all of what is worst to be found among civilized nations. In respect to the really essential and characteristic excellences above pointed out, the American medical school is on the whole inferior to both German and English types;

it has in general not yet attained the homogeneous university constitution characteristic of the German medical faculty; it too frequently lacks the clinical opportunity characteristic of the English hospital school. * * *; the clinical clerkship is becoming more frequent under more and more favorable conditions. The one point of real superiority in American conditions is, however, their greater plasticity. * * * In America, however, a few well-managed schools have already contrived to unite what is best in German and what is best in English medical education. They have taken from Germany the productive ideal; they have taken from England the clinical clerkship. And convincing proof of their compatibility is already at hand.

* * * "America, like England, has employed practicing physicians and surgeons as professors of medicine and surgery, with results generally unsatisfactory both to science and to education.

"Three university schools of medicine—Johns Hopkins at Baltimore, Washington University at St. Louis, and Yale—have now undertaken to reorganize the main clinical departments on the full-time or university basis. It is proposed that the incumbents of the posts in question and their necessary assistants—laboratory and clinical—become salaried members of the university staff—like the teachers of anatomy and physiology; that they devote themselves wholly to the service of the hospital, education and research; and that they withdraw altogether from paid private practice. * * * The schools which are undertaking to introduce the full-time principle in clinical teaching are university departments which have appropriated from Germany the productive ideal, and from England the clinical clerkship. They work therefore under the most favorable conditions, and ought to train a generation of physicians who are at once skillful practitioners, competent investigators and devoted humanitarians."

ANNOUNCEMENT

We are pleased to announce that Dr. Douglas Macfarlan will act as associate editor of the January, 1916, issue of the JOURNAL. He is a liberal contributor of articles on nose and throat subjects to our own as well as other journals.

Dr. Macfarlan is a progressive in subjects medical, and is an energetic investigator. His assistance will be welcome to the editor.

BETTER BUSINESS METHODS FOR THE PHYSICIAN

CHAS. F. A. HALL, M. D.,
Newburyport, Mass.

WE as physicians have a double relation with our patients; the first is of course the professional one, during which, while the patient is sick or disabled from disease or accident, the physician feels a humane interest in the patient's progress toward recovery, a scientific interest in his symptoms and the course of his disease or nature of his disability and the taking of measures remedial or otherwise which will aid him on his road back to a normal condition. The professional duty being ended either by the recovery or death of the patient, the physician enters upon the second, or business relation with the patient, and it is this relation and its allied issues that forms the subject of this paper.

Our subject then, better business methods for the physician, as related to the financial side of the practice of medicine, has to do with the keeping of records, not alone of the temperature-range and pulse-variation and other interesting and scientific data, but the record of charges and credits, the collection of fees due for services rendered, filing of correspondence and numerous other details connected with this important but often neglected and—do I dare say it?—often forgotten side of the practice of medicine.

There are several reasons why the business ability of the physician is so often entirely inadequate. He has not, to begin with, the business instinct or temperament; if he has he is either a poor physician or a nine days wonder, as the combination is very rare. He has indirectly been taught and the profession has long fostered the idea that a fee for service rendered constituted more an expression or measure of the patient's gratitude than a financial equivalent for the time, labor, brains and experience necessary to the proper treatment of his case. There is a popular idea, also largely fostered by the profession, that it is beneath the dignity of the physician to seek money, and the physician who by reason of a fortunate inheritance, experience or education, is successful financially too often is the recipient of the

condemnatory remarks of his less successful colleagues, who do not realize that their remarks are engendered by jealousy and ignorance. In addition, consider the fact that no physician has received as a student any instruction as to business methods; not a single lecture on this financial relation to his patients.

Is it surprising that the average physician's methods of bookkeeping are impractical, inadequate and obsolete, and that after trying various advertised cure-alls in the shape of systems of books or cards, devised by some one ignorant of a physician's requirements, he eventually becomes discouraged and careless?

We, as physicians in the practice of our profession, are engaged in as honest, useful and legitimate a branch of human industry as any other on the face of the earth. No man earns his living more fairly and often more dearly than the busy physician. Why then should we refuse to put a just value on our services? These services have a value, of course, else we should receive no remuneration for them, and, as money is the universal medium of exchange by which the value of all merchandise is estimated, why should it be considered undignified to place a money value on our services?

If a patient cannot pay what is judged to be a fair value for service rendered give him a part or the whole of it, but make him understand that you are giving him something. The fact that he has received the benefit of your skill and experience, rather than a barrel of flour or sugar or a side of beef, has nothing to do with the case, and there is no reason under heaven why he should not feel indebted to you. It is a fact beyond controversion that the layman has more respect for the physician who adopts this attitude and who values his services as worth something more than a brass farthing, than he has for the easy-going, careless, slipshod individual who tells him it does not amount to much anyway and makes light of the whole thing.

When we get the idea that our services possess a monetary value it becomes easier to put a little time and thought into the record-keeping part of our work. A series of V's or OC's or Ob's or other hieroglyphics under a certain date in a visiting list do not mean the same either to physician or patient as do definite terms clearly expressed and plainly charged for in dollars and cents.

The bookkeeping needs of a physician are in a way unique, and the multitudinous systems devised for his use like the numerous

specifics recommended for rheumatism, for example, only argue for their general inefficiency. A system of accounting for any business cannot be simplified beyond the point of showing a clear record of charges and credits. In addition to this, for the use of the physician and to be legal it should show the date of the service and to whom rendered the character of the service, and must not show any case notes, histories or other privileged communications.

The average physician cannot afford to hire a good bookkeeper, and no physician can afford to hire other than a good bookkeeper, so it follows that his system of accounting should require the minimum amount of time and labor. This to my mind eliminates any method requiring a duplication of work, such as that of using a visiting list or memorandum book from which charges are posted to another book or card ledger system.

In addition to these fundamentals it is oftentimes necessary, or at least interesting, to be able to keep case-histories, correspondence, bedside-notes or charts, addresses, etc., and the ability to do this should form an integral part of any proper system of accounting for physician's use. Such in brief are the necessities, and if to the above could be added a low first cost and attractive appearance, what would be left to be desired?

After a varied experience with different forms of daybooks, visiting-lists, so-called self-indexing and self-posting ledgers, ledgers and daybooks combined, and so on, ad nauseam, I became convinced that a card system properly modified was the only thing which offered the proper requisites for our needs and have finally evolved a method which meets my own individual wants very nicely. Any method which meets the given requirement is as good, however, the point being that our books should be kept in such a way that we can instantly tell a patient how much he owes, if required, when the charges were made, for what member of the family and when, if at all, we have received any money on account. All filed data should be as easily and quickly accessible.

By being business-like we encourage a like disposition on the part of our patients. The possession and proper use of some adequate system of accounting will increase cash payments sufficiently to pay its cost in the first year. If you don't believe me try it.

More than increasing income from cash business, it likewise

increases payments on account; not only because of the impression conveyed to the patient that you are business-like and modern in your methods and expect him to be the same, but because of the extra ease with which bills may be rendered.

The promptness and regularity with which bills are rendered are the measure, next to careful and correct bookkeeping, by which the office methods of the physician may be judged.

Opinions may differ as to the relative value of a monthly, quarterly or semi-annual rendering of statements, but there is no question as to the value of adopting some regular time and then rigidly adhering to it. Personally I am inclined to favor the quarterly period, but in many places I am sure that a monthly period would be much better. This matter, like many other details, must be left to the discretion of the individual. It is sometimes inconvenient, I will admit, and it may in some rare instances be impossible to render our statements on the morning of the day appointed, but the nearer we approach to clock-like regularity the better. The method of enclosing some politely worded note with the second or third bill oftentimes brings results. This should be followed up by others if no attention is paid to the first, and it may in some rare instances be necessary to turn the account over to a collector. Usually, however, if one is persistent, the delinquent will come forward gracefully and his respect for you will be much increased. No dead-beat has any respect for an easy creditor; he uses him freely but does not respect him.

The adoption of and adherence to some definite and business-like method for the keeping of our records will do much toward raising us in the esteem of our business friends and clients; it will also go far toward helping us to be more business-like in our relations with the business world.

It is the largest single factor in the development of a more methodical attention to our private business affairs, a more prompt attention to our correspondence, a more prompt attention to our advance business engagements, a systematic filing of vouchers, letters, scientific data and other details which combined make for a business-like administration of our office work.

When physicians become more business-like the demand will be less by the promoters of get-rich-quick swindles for the lists of names of physicians, because such lists will no longer be profitable, and the

physician individually and collectively will be the gainer.

To change the average physician's office methods to proper ones would in many cases cause an upheaval, nothing short of volcanic in its apparent effects. It would necessitate some thought and careful planning, the outlay of a little money and the expenditure of a little time, but I know of no investment in which the proportionate returns on the amount of thought, money and time expended would be greater.

I feel safe in saying that the average physician is now expending as much time and money on his present method as would be required to install and operate an efficient one and that he would be surprised to know just how simple this subject may be made.

Before any change is made, however, give the matter a little careful thought, and study your requirements not from the standpoint of some colleague who perhaps has entirely different conditions to deal with, but from the standpoint of your own individual needs. Ask advice if you wish from as many sources as you please, but do not adopt any method until you have carefully studied into its detailed workings and its fitness to meet your wants.

A method or system of accounting may be like fire, a good servant or, under different circumstances, a hard master.

INTERNAL REMEDIES IN ACUTE INFLAMMATORY CONDITIONS OF THE MIDDLE EAR*

HOWARD P. BELLOWS, M. D.,

Boston, Mass.

WE frequently see opposite certain numbers on musical programs the words, "By request." In presenting what I have to say upon what must seem to you a very trite subject I wish to state at the outset that this paper is written "by request." Of my own initiative I certainly should not have chosen a subject which at first glance seems so commonplace and even rudimentary from a therapeutic standpoint.

Upon second thought, however, our subject can be said to be commonplace or rudimentary only from the point of view of the homoeopathic therapeutist. To very many of the intelligent laity and to almost all physicians of the dominant school of practice the title of this paper might even appeal by its novelty. I assure you that it is by no means infrequent in my office for patients of more than ordinary education and intelligence to exclaim, when I hand them a vial of tablets, "How can medicine which I take by the mouth be of any help to my ear?" It sometimes requires considerable explanation to show these patients how such action is possible. Their final remark may be, "Well, I will take it, but I have no faith whatever in its helping me." To which I reply, "All I ask is for you to take it as I direct. It is not 'faith cure.' If it were how could the best successes of homoeopathy be with infants and children too young to know what faith is?" So the medicine is taken by the mouth to help the aching ear and the practical result often goes a long way towards turning a skeptical patient into one with confidence in drug-action.

Should this doubting patient go to a physician of the dominant school, show her vial of tablets and propound to him the same question, "How can this medicine which I take by the mouth be of any help to my ear?" the chance is that the doctor as soon as he saw that it was not an anodyne, would say to himself, "Any fool would know that it can't." To the patient he would more probably say, "The man who

*Read before the Boston Homoeopathic Medical Society, October 7, 1915.

gave you that may have been honest in his belief that it can, but the great majority of qualified physicians do not agree with him." That would be a perfectly correct as well as a courteous statement, and it leads me to the second part of my assertion, that to almost all physicians of the dominant school of practice the title of this paper might even appeal by its novelty.

Let us see if I am strictly correct in this. I am upon the ground of comparative therapeutics now and if I have been sufficiently thorough and exact in my inquiry the deduction cannot fail to be of interest. To be sure of my position I have carefully collated thirteen of the leading text-books of the old school upon diseases of the ear, which have been published in this country, in England and in Germany during the last ten years, six of them within the last five years. These are all important and standard works of recognized authority.

In all these works, as in our own special literature, as the aural practice of both schools alike, I find absolute agreement upon local attention to the nose and naso-pharynx, paracentesis of the tympanic membrane in appropriate cases, the promotion and maintenance of drainage in purulent states, and inflation of the tympanic cavity after the subsidence of the acute attack.

Regarding local measures for the relief of pain and inflammation in acute attacks I find eleven of the thirteen authors of the old school united upon the efficacy of leeches applied at points about the ear, usually in front of the tragus, at the very outset of the inflammation. Eight specify their preference for natural leeches, two to six in number, but three of the eight recommend artificial leeches also. The remaining three authors condemn the natural leech and approve the artificial only—the withdrawal of blood by this means to the [illegible] two to four ounces. One author writing four years ago states, "There is no other remedial measure that acts so promptly and it would be a distinct advantage if leeches were used more frequently than they are at present."

The next substantial agreement is upon the local application of dry heat, five specifying their preference for the hot water-bag and three for the hot salt-bag. Eight of the thirteen also recommend warm water locally, two by dropping or pouring gently into the ear, three by douche, two by douche or syringe with boric acid in solution and one by douching with bichloride solution 1:4000 or 5000.

It is in the matter of instillations within the ear, chiefly for the relief of pain, that these authors show their individual preferences and the divergence in their practice. At the risk of being tedious I am going to give these instillations in detail, for a reason which will appear later. Five authors recommend carbolic glycerine; six cocaine in water, oil or glycerine; two, cocaine, with adrenaline; two, Burow's solution; two, saturated boric acid solution; and one each, carbolic acid, glycerine and cocaine; cocaine with morphine; cocaine with atropine, opium, morphine, morphine and atropine, and thigenol-glycerine solution.

As adjuncts of treatment two recommend painting with iodine around the ear, one the leucodescent light, and one the fumes of chloroform blown into the external canal.

Turning now to the internal remedies which are recommended, twelve authors are in agreement upon the early administration of a cathartic, eight specifying their preference for calomel and four for saline cathartics. Writing of catharsis one author says: "This routine measure should be prescribed regardless of the presence or absence of constipation or digestive disorder." Two advise diaphoretics; as anodynes, three prefer opium; one codeine; one paragoric; one a mixture of morphine, chloral and bromide of soda; and another, codeine, extract of belladonna, phenacetine and salol. Two prefer hypodermics of morphine or morphine and atropine. One each recommends the administration of antimony, bromide of potassium, and phenacetine. Three advise aconite in small and frequently repeated doses and one of these recommends pulsatilla also. I will quote from this author, writing of the treatment of acute suppurative inflammation of the middle ear: "A triturate tablet of calomel, gr. one-tenth to one-quarter, should be administered every hour for six doses, or until a slight laxative action is produced. Aconite in drop doses is also a most valuable remedy when there is fever, and especially in cases due to cold. Tincture of pulsatilla, likewise given in drop doses, is indicated also in cases in which there is a profuse discharge from the nares or naso-pharynx, and may be administered alternately with aconite."

Now the point I make is this: Contrast the richness of resource of the old school in the local treatment of the acutely inflamed middle ear with the paucity of resource in the use of internal remedies aside

from anodynes, and is it not evident that to almost all physicians of the dominant school, including aurists, the title of this paper might appeal as a novelty in therapeutics?

With this somewhat lengthy introduction I will proceed to my subject proper—merely mentioning that as regards the local treatment of these acute conditions in my own practice, I have never in my life used a leech, either natural or artificial, and aside from the constant use of dry heat and occasional use of hot-water irrigation (which belong alike to all schools of practice), I have never employed any of the local measures which I have been enumerating, with the exception, in rare instances, of cocaine solution, which is not very good, and the cocaine-adrenaline solution, which is decidedly better.

Turning now to the internal remedies, upon which I do rely in every case which I treat, I will endeavor to present as clearly as I am able the indications for the choice of eight of our leading remedies in this field of action.

Aconite. The use of this remedy in acute inflammation of the middle ear must frankly be admitted to rest rather upon its known influence upon inflammatory conditions in other portions of the body than upon any specific effects actually observed within the ear by provers of the drug, or as toxic effects in cases of poisoning. Rather indefinite pains in and about the ears were observed by several provers and, as concomitant symptoms, roaring, ringing and other subjective noises were developed and are noted still more prominently as toxic symptoms. Marked aversion to noises and even to music is quite characteristic and has often been clinically verified. Nervous, plethoric people are most likely to be benefited by aconite, and conditions characterized by marked *tension*, either physical or mental, with accompanying restlessness and anxiety are indications for the drug. Especially is it applicable to conditions which result from *chilling* the body, more particularly if from exposure to cold dry winds, or the cutting winds of high altitudes. The rapidity of its action is favorable to its employment in acute inflammation of the middle ear. Upon this basis rests our use of aconite in this disease and the special indication for its choice would be the cause of the inflammation from exposure to cold, dry winds. Practically it is used far less often than belladonna in aural practice.

Belladonna. In the use of this drug in diseased conditions of the

ear our expérience rests upon a much more precise and scientific basis than is the case with any other internal remedy which I shall cite. Previous to the proving of belladonna by the American Ophthalmological, Otological and Laryngological Society there had been observed and recorded very definite and severe pains in the ear, mostly tearing or shooting in character, which had been experienced by various provers of the drug, together with other evidences of the presence of an induced inflammation in the middle ear. As concomitant symptoms there were developed subjective noises, chiefly roaring, ringing and humming, and an over-sensitiveness to noises similar to the effect of aconite, although apparently less extreme. The O. O. and L. proving added to this knowledge of the drug's action a positive demonstration of the power of belladonna to congest the middle ear. This was evidenced by further subjective symptoms, by objective appearances upon actual inspection, and by clinical tests. The extension of congestion from the typical dry and inflamed naso-pharynx into the Eustachian tubes was noted, with tickling, pain and soreness in the tubes, snapping noises upon swallowing and subsequent fulness and stiffness in the ears, characteristic tinnitus, autophony and deafness, as well as pain, soreness and aching. Inspection of the drumhead revealed not only depression but general hyperaemia and localized areas of congestion about Shrapnell's membrane and around the short process of the malleus in a number of different provers. I myself observed in one prover, in both ears, a distinct pink-reflex through the lower quadrants of the drumheads from the inflamed median walls of the tympanic cavity. The pathogenic indications, both subjective and objective, for the use of belladonna in acute inflammation of the middle ear are absolutely clear. The typical belladonna patient is a red-faced, plethoric individual, with marked determination of blood to the head, and consequently subject to headache, chiefly frontal, and to vertigo. He is *sensitive* in many ways, but especially to light, to noise, to jars of the bed if very sick, to draughts of air and to cold, damp weather. His pains are apt to be boring, pulsating and stabbing and they both develop and disappear quickly. His symptoms are all apt to be worse in the middle of the afternoon and during the night. The excessive dryness of the nose and throat, without thirst, and the full bounding pulse are classic indications for the selection of the remedy. Personally I employ it far oftener than any other in acute inflammation

of the middle ear, whether catarrhal or suppurative, and if the grade of inflammation is severe, with violent pain, I always use it locally in the meatus as well as internally. For this external use the tincture of the old school pharmacopœia is better than ours because somewhat stronger. I place three or four drops on a small pledglet of absorbent cotton which I thrust just within the external meatus and cover with a dry, hot salt-bag, about four inches square, as hot as can be borne, and this is covered with a large, dry flannel. The tincture can be renewed every hour, if necessary, and the salt-bag oftener if desired. Internally my favorite dilution is the fourth decimal; that is, the third decimal dilution from the tincture, which is now considered to be of the first decimal strength. With some adults I use even the second decimal and with children very often the sixth or higher.

Ferrum phosphoricum. This, as we know, is one of the so-called "tissue-remedies" of Schüssler and in its use we cannot as yet avail ourselves of any strictly homoeopathic provings. It is known, however, largely by abundant clinical experience, to be a drug which in the ordinary homoeopathic attenuation and dosage is peculiarly applicable to the relief of localized congestions. In a general way these congestions are of rapid development, attended with pain, often severe, of burning, pulsating, stitching and sometimes radiating character, and when suppuration occurs the pain is not relieved, as we should expect it to be, by the purulent discharge. The curative action of the drug is exerted in the early stage of such congestions, at their onset, before suppuration begins. In its application to acute inflammation of the middle ear, the guiding symptom which leads to its choice is the intensity of the local throbbing. The sensation is that of a *hammering* within the ear and is so described by the patients in almost every instance. A boy once said to me, "It feels as though a little machine was working inside my ear." In the presence of this indication the action of ferrum phosphoricum is often extremely gratifying. The typical patient is not plethoric but rather the reverse, tending to emaciation, with depressed vitality and lassitude of both body and mind, but still with the tendency to sudden, localized congestions. If there is a period of aggravation at all characteristic it is between four and six in the early morning, the time for the greatest physiological depression.

Gelsemium. This remedy is useful when, as the result of a cold,

the throat becomes sore, with burning, dryness and sense of constriction. Swallowing becomes difficult, as from impending paralysis, and causes a shooting pain into the ear. The Eustachian tubes become distinctly involved and later occluded. There is aching, rushing and roaring in the ear, very probably accompanied by occipital headache and possibly vertigo. The typical patient is nervous and hysterical, chilly and drowsy, with muscular relaxation and mental apathy. My choice of the remedy in acute inflammation of the middle ear is usually determined by the pain shooting from the throat to the ear and the accompanying characteristic occipital headache, which seems to be in close relation with the aching ear.

Chamomilla. The mere mention of this drug calls to mind the picture of a little child exhausted by pain which it can no longer bear; peevish, cross and unreasonable, one cheek pale and the other red, and demanding to be carried constantly up and down the room because of the relief which comes from motion. We come to prescribe chamomilla, especially to children, more because pain cannot be borne than because the pain is thought to be *really* very severe. And yet as regards the ear the pain may be actual and intense, as is attested by at least five different provers. It is predominantly of stitching character, increased by stooping, and accompanied by subjective, roaring noises, like the rushing of water, marked over-sensitiveness to external noises and intolerance to music. A peculiarity worth noting is aggravation from heat and yet a marked sensitiveness to open air, particularly about the ears.

I think those who use the usual lower potencies of this drug are likely to be somewhat disappointed in its action. My own favorite attenuation is the twenty-fourth decimal which, largely as a matter of personal experience, I ran up myself, by hand, from the tincture.

Pulsatilla. This is a well proven remedy which, in the aural sphere especially, has withstood the clinical tests of a century. The character of the pain, as determined by the provings, is jerking, tearing and shooting, sometimes with pulsation at night. Also "a violent pain in the ear as from something forcing outward," as the prover expresses it. There is an associated sensation as if the ear were stopped up, with distant roaring. The pain at times extends over the whole side of the head, and is not relieved by hot applications. The temperament of the patient and the characteristic modalities often guide one to the choice

of the remedy. The typical pulsatilla patient is a blonde, of mild, affectionate, tearful disposition. *There is chilliness with aversion to heat.* The patient feels worse in a warm room, especially if close, also when too warmly covered and from warm applications, as just mentioned in regard to pain in the ear. The patient though complaining of chilliness feels better in a cool room, in the open air, from cold food and drink and from cold applications. Absence of thirst is a keynote. All symptoms are worse in the evening before midnight and better during the day. Patients feel worse from rest and better from gentle exercise, especially in the cool open air.

Using the phraseology of the present war pulsatilla, in combatting acute inflammation of the middle ear, occupies a position in the "second line of defense." On the first line of defense, in the forward trenches, are aconite, belladonna, ferrum phosphoricum and gelsemium, and nine times out of ten the actual fighting is done with belladonna. Chamomilla is also on the second line; the onslaught has already been checked, but the nervous system has gone to pieces and there is terror in the bursting of every shell. If pulsatilla ever advances to the first line of trenches it is in cases where the attack is a mild catarrhal affection, or is subacute from the start. Its usual place is after the height of the inflammation is past and especially in suppurative cases where paracentesis has been performed, or spontaneous rupture of the drumhead has occurred, and the discharge, which is thick, bland, yellow or greenish-yellow and mucopurulent, has become fully established.

Mercurius. This is another important remedy which in inflammation of the middle ear occupies the same relative position as pulsatilla—following belladonna or one of the more active remedies, except, occasionally, in mild catarrhal or in sub-acute cases. It is more closely related to chronic than to acute conditions of the tympanum, however, and therefore recedes somewhat in importance in the present paper. The leading sensations in the ear are pressure, sticking pain and soreness. The characteristic discharge is excoriating, offensive and even bloody. The choice of the remedy is sometimes determined by the three well-known keynotes: marked sensitiveness to *changes* of temperature, whether hot or cold; marked aggravation at night and profuse perspiration which affords no relief. Of the various preparations of mercury, I use in tympanic affections the solubilis, although the vivus

is probably identical in action.

Hepar sulphur. Lastly, a few words in regard to this remedy, which is invaluable in its place but of limited application in acute middle ear inflammation. Its sole relation here is to suppuration, which it hastens in recent cases which belladonna has failed to abort. It is particularly useful in cases where the discharge, already established, has become checked prematurely, with the return of acute symptoms—increased pain, rising temperature and distinctly localized tenderness upon pressure. An ear in this condition demands hot irrigation and, perhaps, another incision of the drumhead or the enlargement of an inadequate perforation, and it will recover under such treatment. But I assure you, after many years of experience, that if, in addition to the local treatment, the third decimal attenuation of hepar sulphur be administered internally the recovery will be much more rapid and complete.

These remedies have been my familiar and trusted helpers through thirty years of special practice and I can honestly say that I have greater confidence in their efficacy today than I had thirty years ago. I have come to realize fully, however, that the prescribing of one or another of these remedies, whichever may come handy, for an acute middle ear inflammation will lead to nothing but disappointment. One remedy in each case is the right one and only one remedy. To determine which is the right one requires both study and thought, and as many related symptoms as possible must be taken into account in making the selection.

Again, the remedy when chosen will yield the best results only when it has received some degree of attenuation. I have noted upon several occasions when I have been called in consultation that the medicine case of my colleague was largely filled with tinctures. One can get results with those assuredly, but I maintain that one cannot get the best results with them. A carpenter can do a lot of execution with a good, stout screw driver, if he hits it hard enough, but let him file down and sharpen the edge of the screw driver and he has got a chisel. With a chisel he will do far cleaner and more effective work than he ever could with any sort of screw driver. A good carpenter has a whole chest of tools and he chooses each one for just the kind of work which he has before him, an axe here and a plane there, and never uses a saw when there is a nail just ahead of it. More than

that, when he is doing a really good piece of work he never uses but one tool at a time.

You all see what I am driving at. You catch the idea without my taking more time or using more words. I am standing here after nearly forty years of experience in homoeopathic prescribing and making another plea for the old, time-honored, homoeopathic trine—the totality of symptoms, the single remedy, and something at least approaching the minimum dose.

Medical instruction in China. China has the prospect of becoming the best medicined nation in the world, according to recent proposals of the Rockefeller Foundation. The plans just published by the Foundation, says the *New York Times*, call for the establishment of a central medical school for the training of native physicians in one of the larger provinces, with numerous branch hospitals and medical supply stations. There will also be a training school for native nurses. We read:

"It was in the winter of 1913 that the Trustees of the Foundation became convinced that the greatest need of the Chinese people was an adequate system of medicine. In February, 1914, a commission was appointed to draft a system of public and personal hygiene for China. The commission met in Peking May 1, 1914, and spent four months in conference with missionaries and government officials, and in an inspection of the existing medical schools, hospitals and dispensaries.

"The working plan of the Medical Board contemplates the mastery of all existing data. From the United States Mission Boards the name, educational qualifications, location and statistics of annual work of every medical missionary in China will be obtained; on a map will be marked every medical station. All foreign mission boards will be asked for the same data."—*The Literary Digest*, Oct. 9, 1915.

ACCESSORY NASAL SINUS DISEASE A POSSIBLE CAUSE OF SUICIDE

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ALL authorities seem to be in agreement that suicide during recent years has increased to a much greater degree in proportion than the increase in population. A variety of reasons are offered in explanation, but each writer seems to be governed largely by personal bias or observation. Therefore I feel that my deductions resulting from observation and experience during the past fifteen years may be permissible and possibly result in fuller research by others more vitally interested in this woeful topic—suicide.

That suicide is not always the result of an unbalanced mind is recognized and well illustrated by the Japanese method of hari-kari, performed by no less a man than Admiral Togo as a mark of his esteem for his recently deceased Emperor.

Discussion of this subject seems therefore to rightfully belong to the alienist and psychologist, but as a practical clinician I have been brought in contact with a few actual suicides and a much larger number of would-be suicides. Strangely enough all of these cases had suffered with some pre-existing mastoiditis or disease of the nose or proximate accessory sinuses. Furthermore, all my patients had suffered from at least one attack of la grippe before any thought of suicide had been entertained.

According to Osler, la grippe prevailed in St. Petersburg in October, 1889, spreading in November and December to Germany, France and Western Europe, appearing in London late in December, and about the same time in the United States, where it rapidly became epidemic.

Since the wide-spread appearance of la grippe, suicide has increased considerably. This may have been mere coincidence, or perhaps there is some causal relationship. The march of civilization seems also to be accompanied with an increase of self-destruction, and this is true not alone in adults but also in children. Gould and Stevens seem to believe that eyestrain is a "frequent cause;" other

writers tend to the idea that the act is one of blind imitation, and this idea is somewhat sustained by the numerous reports of bichloride of mercury suicides occurring during the past year or so.

Eyestrain and mental stagnation are frequently associated. Mental stagnation is often induced by the presence of adenoids and diseased faucial tonsils, this being particularly so in young children; but in youths and older adults the same state may be due to abnormal intranasal conditions. These chronic conditions of the naso-pharynx are associated with some pathological state of the accessory sinuses, either as a passive congestion or actual hypertrophic change of their mucous linings. The Eustachian tubes, tympanic cavities, mastoid antrums and cells are to all intents and purposes accessory sinuses, as well as those more generally considered under that title; and so it may be conceded that the diseases of the accessory nasal sinuses and the several parts of the ears may often result from the same source of infection within the naso-pharynx primarily.

In the April, 1911, issue of *Ophthalmology,* I called attention to the fact that, "The wearing of properly prescribed lenses frequently overcomes a mere turgescence of the middle turbinated bodies. Repeated observations prove that these bodies will ofttimes be reduced through this means alone. On the other hand, conditions which the author terms erratic refractive states are positively altered by reducing the size of the middle turbinated bodies. Frequently, through treatment directed to that end, the glasses in use must be changed, or the need for their use is overcome and glasses may be discarded."

These simple experiments illustrate the interdependence of the eyes and nose, which naturally includes the accessory nasal parts. Therefore, if we accept as fact that "eyestrain is a frequent cause of suicide," it naturally follows that diseased states of the nose and accessory parts may be also, and likely are important factors in the induction of self-destruction.

Penologists have noted the rather frequent accomplishment of suicide in order to escape punishment for crimes committed. The present day attitude in explanation of crime looks to some one or to several stigmata as factors in disease leading to criminal acts, and therefore making of crime not an act of the mind but a symptom of disease. Consequently, even he who commits suicide to escape punishment merely exhibits additional evidence of his primary diseased

state. What this condition may have been is suggested by the many criminals who bear the stigmata now accepted as the result of nasal obstruction or the neglected adenoids and enlarged tonsils of childhood.

There are so many who suffer from la grippe and the complications affecting the nose or sinuses, and so few of them who commit suicide, that further explanation is necessary to indicate why certain types are so prone to self-destruction.

My observations lead me to the belief that they who suffer from diseases of the accessory nasal sinuses and are prone to suicide are such as are of the neurasthenic temperament and exhibit a tendency to melancholia when ill. Consequently, it may be stated that at least some cases of suicide seem to be the end result of melancholia sequent to the neurasthenic temperament, for a well-developed neurasthenia may be replaced by a state of melancholia, and while in the latter condition persons frequently commit suicide.

Health is incidental to nerves in harmony. Neurasthenia results from occasional but repeated nerve tension. Tension may be induced by eyestrain, faults in the respiratory tract, gastro-intestinal tract, or persistent abnormal states in any part of the body. Pathogenic infections of long standing are particularly distressing and lead to nerve imbalance.

Robert T. Morris in his recent book, "Microbes and Men," has developed the philosophy that certain germs create toxins that induce cheerfulness, and offers in evidence the tubercle bacillus and the resulting effect upon Robert Louis Stevenson, whose mind was so influenced by the toxins developed that he produced an optimistic literature. On the other hand, Carlyle and others suffered from toxins that induced pessimism, they being under the influence of the colon bacillus.

Long before I even heard of Morris' idea, I had conceived the thought that in these cases of mine there was a something about the infections present that was little understood. Mayhap there is an unrecognized germ that develops a toxin which leads to suicide. In any event all of my patients had suffered from la grippe and all presented abnormal nasal conditions and all suffered from some diseased state, either of the proximate nasal accessory sinuses or the more distant mastoids.

The first case in my experience that terminated in suicide was a lady who consulted me on advice of Dr. Faust, of Schenectady, some

fourteen years ago. She was suffering from chronic mastoiditis which had resulted from la grippe. She also exhibited hypertrophic rhinitis and nasal irregularities on the same side as the ear affected. After an appropriate operation she seemed to be progressing to a satisfactory state, but one morning within two hours from the time of consultation she drank a quantity of carbolic acid and died within a very few hours. Her husband then informed me, what he had previously considered of minor import, that his wife after suffering from la grippe and having developed a discharge from the ear had seemed to change in disposition. She exhibited the well-recognized signs of spinal neurasthenia and at times brooded and talked about committing suicide. However, they had been told that they who talked suicide rarely ever did it, and so had given the matter little thought.

Later a well-known physician consulted me, exhibiting the usual symptoms of neurasthenia and history of repeated attacks of la grippe. He had been examined by many advanced and acknowledged authorities. Everything had been done secundum artem. His glasses had been changed frequently, sometimes he was given plus lenses and at other times minus lenses, and also many combinations of spheres and cylinders had been tried without avail. He confided to me that if I failed to relieve him he intended to commit suicide. No one had ever examined his nose or ears. These I examined and found the inferior turbinate of the right side in contact with a large septal spur. All tissues were hypertrophic and the drainage of all sinuses occluded. I excised the spur and relieved the pressure—submucous resections then being unknown. All symptoms were controlled, the eyes no longer exhibited uncertain refractive states, and in the fourteen years since elapsing he has had no idea of suicide. This patient was cured of *suicidal desire* through appropriate nasal surgery.

Another patient exhibiting *suicidal desire* presented practically the same history and underwent similar experiences in treatment. He has been under my care now for ten years, and in place of the old desire to destroy life he has undertaken to play his part in the creation of life, for he has regained his health and mental status to the degree that he is able and willing to work; and, having married, is now the father of two children. He, too, had suffered from la grippe subsequent to an accident which had fractured the nasal septum, and been followed by hypertrophic changes which obstructed the drainage

of the sinuses, and occasioned stenosis of the Eustachian tubes with the usual distress associated therewith. Treatment in this case was surgical, and, after having provided free ventilation of the nasal passages and easy drainage of the sinuses, and at the same time overcome the ear condition, this patient was freed of his *suicidal desire*—and I trust forever.

Still another case of *suicidal desire* is that of a highly educated young woman. Refined and gracious, she might be said to possess a neurasthenic base, a stand of melancholia capped with *suicidal intent*. The same history, similar conditions, and treatment in accord with the previous cases have resulted satisfactorily. This patient, though, is not yet cured, and a reinfection of la grippe may prove disastrous. However, her present condition is infinitely better than upon first consultation, and I believe a cure will finally ensue.

An even more positive case of much interest is that of a young man who consulted me for the first time last spring. I class this case as one of *suicidal desire* and *actual attempt*, for he bears a deep and broad scar resulting from the furrow plowed by a misaimed bullet intended for his brain but only catching his chin. Poor aim but lucky man. The scar was but barely healed when he first consulted me, and he then said he would try again some time, for he could not stand the rotten odor that was always with him. The odor strongly suggested specific taint, but to the contrary was a negative Wasserman. His history had been one of la grippe, with failure to recover. I found actual empyema of both maxillary and frontal sinuses and ethmoid cells. Appropriate intra-nasal surgery was successful and he is now cured. The extent of his cure is evidenced by the fact that he now runs a Ford car, while before treatment he could not be induced to even enter one.

Another, and the second successful suicide in this series, is a young farmer who consulted me some two winters ago. He had always been a neurasthenic, and after an attack of la grippe he exhibited periods of melancholia. His physician thought little of the long continued discharge from his ear, and his persistent headache to him was a mere symptom, suggesting nothing. He consulted me because of the ear, and I immediately performed a radical mastoid operation and uncovered one of the most extensive epidural abscesses I have ever seen. The post-operative result was highly satisfactory, even

though he did exhibit symptoms that occasioned concern regarding the actuality of his committing suicide. However, matters were progressing nicely until the family physician insisted upon removing him to his home. I urged against this step, and in a written communication predicted the man's death by suicide if he was removed. Nevertheless the patient was taken home, and the following day was found in the barn, dead, where he had hanged himself. It is safe to assume that this patient would have been cured had he remained under appropriate care.

Another case in point is that of a physician in Greater New York, who contracted la grippe and as a sequel double mastoiditis. In the nurse's absence he committed suicide by cutting his throat. Had this patient been properly watched he might have been saved to a life of usefulness.

The lessons taught by this presentation of cases is that la grippe implanted upon the neurasthenic temperament is a more than serious matter. Death itself is a mere transition that none of us should fear, but self-destruction is a disgrace that injures the memory of the departed and hurts them who are left behind. We, as physicians, should do all in our power to avert such catastrophes, and in our cases of la grippe should everlastingly look to the ears, nose and accessory sinuses.

Direct some of your attention to these parts and through proper cleansing at the right time avert the complications that I have shown may prove so disastrous.

Always bear in mind that the so-called "nasal catarrh" is pathological, and that for true health the nasal passages must be freely ventilated and the sinuses easily drained.

The stigmata are mouth-breathing, headache—particularly in the morning—mental hebetude, cervical adenitis and general ill health.

Their correction is a matter of recognition and the direction of appropriate treatment. In these cases an alliance between the man of broad general practice and the specialist is essential. By such partnership there is no telling how many cases of possible suicide have been or may be averted.

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COLDS: THEIR ETIOLOGY AND TREATMENT

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So far as their etiology is concerned, colds fall into four classes: First, those due to nasal changes dependent upon nasal deformities; second, those due to changes in aerial saturation; third, those apparently due to bacterial infections; fourth, those due to pollen. It is possible, yes, even probable, that in an ultimate analysis the third and fourth etiological factors could be reduced to one, viz., that of an anaphylactic state or a sensitization of the patient to certain proteids of pollen and bacterial origin.

Considered in order, it is questionable how much influence nasal deformities carry in the production of repeated colds. That they are an essential factor is far from true, but that they are a powerful predisposing factor through the atrophic and hypertrophic changes to which they give rise, through their interference with proper drainage and consequent chronic infections of the various accessory nasal sinuses, is undoubtedly true. The second cause is in my judgment far from being an unimportant one. I have many times gone into a building, or a home closed up and artificially heated, and noted on the hygrometer a registration of ten or less; then by exhaling into the instrument had it rapidly rise to sixty, seventy or eighty, showing the great difference in saturation between the inspired and expired air. This difference must be made up by the mucous membrane of the respiratory tract, and chiefly by that of the nasal turbinates. In such an atmosphere I am conscious soon of a dry, stuffy nose, with inclination to sneeze and an irritation of the pharynx and larynx, these phenomena disappearing shortly, with a slight coryza, after passing out into the open air. A continued repetition of this over-stimulation must in the course of time be followed by vaso-motor relaxations and turbinate hypertrophies.

The third and fourth etiological factors, viz., that of bacterial infections and the various pollen phenomena, may perhaps be considered together, for repeated infection by the same bacterial elements is

undoubtedly as much an anaphylactic phenomenon as are the pollen reactions. The pollen—or as they are variously known, the rose, or hay-fever colds—present the more distinctly pronounced anaphylactic state, and result from the sensitization of the patient in some manner, either hereditarily or by acquisition, to one or several of the pollens from the flowering vegetable kingdom. These cases have been studied very carefully of late by Goodale, of Boston; Mackenzie, of London, and others, and many of these have been tested serologically to demonstrate their sensitization toward different pollens. The Von Pirquet test with tuberculin simply demonstrates whether or no the patient so tested has ever been sensitized to tuberculin, either by injection, by a tuberculous process, or by inheritance, and to some extent shows the degree of sensitization existing at the time of the test. This test has now been applied to toxic proteids without number, and seems to be just as true a test of the sensitization of the patient to other proteids as to tuberculin. By this means it is possible to demonstrate in a hay-fever patient the exact pollen or type of proteid to which he owes his hay-fever phenomena.

In dealing with the bacterial winter infections the probabilities are that the same conditions exist, that the subject of repeated strepto- pneumo- catarrhalis or influenza bacillus infections is one who has either been sensitized by an acute attack of one of these infections, or is kept in a state of sensitization by a chronic infection somewhere in the upper air passages, as the sinuses, an adenoiditis, a tubal catarrh, a tonsillitis, etc. While these cases have not been studied so carefully as the pollen types, it may be possible, too, in these cases to demonstrate serologically the sensitization of the patient and the exact type of infecting agent to which he is sensitized, notwithstanding the fact that many bacteria may appear in his secretions.

If we accept these facts then our treatment of these cases is plain. In the first case, in dealing with our winter colds, an hygrometer is a good thing to have in the house. It is not expensive and one can quickly determine the kind of atmosphere the patient has been accustomed to living in.

If the saturation is far too low, a cooler temperature and better ventilation should be supplied. The patient should live as much as possible in the open air, and, especially at night should plenty of air be admitted to his room and the temperature of the room lowered.

This is very true if the outside air of the district in which he lives—as our lake region—is inclined to over-saturation, making the difference between the inside and outside air very pronounced. It is perhaps superfluous to say that nasal deformities and sinus, naso-pharyngeal, and tonsillar infections should be cared for surgically. These are things that in this day are much more apt to be overdone than omitted.

Now a careful search should be made to find the specific substance, if any, to which the patient is sensitized, and with me this has been done in the following manner: During an acute exacerbation a slide is made from the naso-pharyngeal secretions or the expectorations (from the nasal secretions negative results are invariably obtained), and later a culture. If the culture agrees with the predominating organism demonstrated in the slide a vaccine is prepared. This vaccine is then used, not only on the patient for whom it was made but on all patients presenting themselves whose slides show the same infections. Those patients showing the same infections and suffering simultaneously are probably all sensitized to the same type of infection. Anyway, in my personal experience they all respond fairly promptly to the vaccine. Stock vaccines bought in the open market, with me, are invariably disappointing in these cases. One must slide his cases frequently, for the type of infection changes; the pneumococcus, streptococcus and catarrhalis being at different times the predominating organisms. I have several times tried making a Von Pirquet test on these patients with these three organisms to see if sensitization could be demonstrated, but have never been able to get the reaction exhibited to tuberculin or to some of the pollens—very probably because the vaccine was not sufficiently toxic, although I have occasionally obtained some general and focal reactions from injections which have been comparable to the general and focal reactions obtained from the injection of tuberculin in a sensitized patient.

The summer colds, while they may be bacterial, are rather apt to be pollen in character, and their severity and date of appearance are a fair guide to the etiological factor, the symptoms appearing during the flowering season of the plants containing the specific proteid. Goodale has been testing out serologically a series of patients to pollen solution of various plants and to the proteid products of various vegetables, grains and grasses, and has succeeded in obtaining

some marked reactions. Where the patient shows a sensitization to a certain proteid, weak solutions of this are used to immunize the patient. My own personal experience in the matter has been limited so far to the use of ragweed pollen, but Goodale's demonstration of the sensitization of many of these patients to other proteids than the ragweed opens up a big field which promises much in the treatment of these cases. It is along these lines that I believe the greatest measure of success can be obtained in the treatment of our so-called colds.

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V. A. Decot (*Buffalo Medical Journal*, August, 1915) declares that diseases of the eye, *because of the constitutional factor* back of them, are most difficult to treat. It is impossible to benefit the ocular disorder until the constitutional disease, whatever it may be, has been successfully controlled.

The treatment of pyorrhea, dentalis and alveolaris is outlined by Barr and Johns (*Jour. A. M. A.*, 1915, 553). The demonstrable organisms can be destroyed by giving ½ gr. emetin hydrochlorid hypodermically for three to six successive days, or by giving two or three alcresta ipecac tablets by mouth, t. i. d., for four to six successive days. The lesions may require several weeks or months to heal. Injections of ipecac or emetin locally may be of value, and rinsing the mouth with fluidextract of ipecac solution may prevent reinfection.—*Med. R. of R.*

A COUNTRY PRACTITIONER'S TREATMENT OF COLDS

Edward Kirkland, M. D.,
Bellows Falls, Vermont.

IN view of the triumphs of modern medicine in eliminating typhoid, lessening contagion by quarantine, and shortening diphtheria with antitoxin, one is sometimes tempted to think that there is little left for the general practitioner to do. The field of obstetrics remains open to him, at least in the country. He can treat respiratory disorders for three months of the winter and has the privilege of loafing the rest of the time. There is little question, however, but that the treatment of colds, from a simple coryza to a severe bronchitis, occupies a great share of a country practitioner's time at certain seasons.

In the care of colds one has his ideas which he may not be able to carry out in all perfection, owing to the varying circumstances and sometimes general "cussedness" of his patient. It is the ideal of which I wish to write and which we should hope to attain.

In the first place, prevention being better than cure, one needs to impress the patient with the belief that the sole cause of colds is not exposure, but exposure plus infection; and that a cultivation of the open-air life and a hardening of the skin by cold bathing or sponging is a fairly reliable preventive. Arctic explorers are said never to have colds until they return to civilization. The patient who has a cold should be avoided by his family and friends as thoroughly as though he had some other infective disease.

An Irishman once said to me, "I've caught a bad cold, and didn't run to catch it ayther." Having once caught cold, the question of treatment naturally comes up. This may be divided into dietetic, hygienic, local and medicinal.

"Stuff a cold and starve a fever" is a popular saying. Where properly interpreted, "Stuff a cold and you will have a chance to starve a fever," it is a very true one. A low diet, preferably liquid, with an abundance of cold water is applicable in the vast majority of cases. The only exception should be in the case of old people of a low vitality, when a more supporting diet is required.

Rest in bed, especially in the aged and weak, is a very good measure. I often say if I could keep every patient with a cold in bed for twenty-four hours I should get quicker recoveries.

Locally, in cases of acute coryza with much sneezing and a discharge of excoriating mucus, I see no objection to, and often note benefit from a douching or spraying with a mild alkaline antiseptic. If there is sore throat or laryngitis the cold compress properly applied is efficacious.

This leads me to say that in congestive colds with fever, headache, neuralgic pains all over the body and a sense of oppression in the chest with blood-streaked sputum, I have seen marked benefit from the cold pack. The patient should be kept in the pack for one or two hours and given frequent drinks of cold water by the tumberful. If there is very strenuous objection to the general cold pack, a good measure of benefit may be obtained by chest or trunk packs. One is often surprised and delighted by the prompt relief afforded in the shape of free diaphoresis, reduction of temperature and lessening of congestion. It is almost as difficult, however, to persuade patients of the efficacy of hydro-therapeutic measures as it is to convince physicians.

Medicinally, the most frequently indicated remedies seem to be gelsemium, aconite, allium cepa, arsenicum iodide, sanguinaria nitrate, hepar sulph. and bryonia.

SUBMUCOUS RESECTION OF THE NASAL SEPTUM

CONRAD SMITH, M. D.,

Boston.

OBSTRUCTIVE deviations of the nasal septum are the most frequent causative factor in many of the simple and suppurative inflammations in the nose and accessory sinuses. Theoretically, the septum should be vertically placed, separating two equal and symmetrical nasal chambers. Such a septum is never seen. The variety and combination of deformities make it impossible to picture them here.

It is the experience of those who have done considerable submucous work, that it is best to use this method in practically every septal case. The principle is a sound surgical one and the procedure is conservative rather than destructive. The reconstructed septum is restored to the median line, with plane surfaces, and completely covered with functionating mucous membrane.

With the development of this operation there has followed a multiplicity of instruments, alphabetical incisions and variations in individual operative technic. Space limits the writer to a consideration of these details and a presentation of personal preferences.

Submucous resection of the septum is a major operation requiring a thorough surgical training. It should be performed preferably in a hospital, and in the office operating room only when careful asepsis can be maintained.

Local anesthesia requires co-operation between patient and operator. By explaining to the patient the general operative plan the surgeon lessens the anxiety and faintness sometimes occurring during any long operation. There are several methods of inducing local anesthesia. Complete anesthesia which lasts and is practically free from disturbing subjective symptoms can be obtained by the following method. To a 1-2000 solution of adrenalin add the requisite number of cocain hydrochloride tablets to make a 10 per cent. solution of cocain in adrenalin. Apply this on pledgets of cotton with excess squeezed out and in close apposition to both sides of the septum over an area larger than the operative area. Wait one-half hour before operating.

In extreme anterior deviations also inject a 1 per cent. solution of novocain.

Aseptic technic requires prolonged boiling of all instruments, preparation of operative field and operator's hands. After removing cotton from nose, irrigate with alkaline solution, and then thoroughly cleanse nasal vestibules, external nose and wide surrounding area with soap, followed by alcohol. A moustache on patient's face must be covered with several layers of sterile gauze kept in place with adhesive plaster. Operator's hands should be scrubbed with soap and immersed in alcohol.

Patient should be seated in a comfortable operating chair, slightly tilted backward, with head brought forward in head-rest. Operator sits on a stool at patient's right and close enough to eliminate wearisome extension of arms. Small electric headlights burn out and do not give deep illumination. Preference is given to a round, not frosted, and intensive mazda lamp of 25 watts in a Mackenzie condenser. The Allison extension bracket permits the chair to be placed away from the wall far enough to operate, with patient in reclining position when necessity arises. Instrument tray is directly in front of operator for rapid selection of instruments. The experienced surgeon uses very few instruments.

For convenience of instrumentation many operators always make the primary incision on the patient's left side of the septum. This is a method which will simplify many otherwise difficult cases and can be used in all types of deformities. The incision is made anterior to the obstruction. It is curved when near the tip and more vertical when further in. Either incision can be extended directly across the nasal floor, thereby giving free access to an extreme deviation.

When the convexity is on the left side and it is difficult primarily to elevate the muco-perichondrium down to the nasal floor, incise the cartilage and elevate membrane on the side of concavity. After removing this upper section of cartilage down to extent of separation with Ballenger swivel knife, the Asche fracturing forceps will straighten the lower section, at the same time freeing it from its muco-perichondrium and disarticulating it. In extreme or angular deformities this is safer than taking advantage of the lateral resiliency of the nose to pass by sharp and abrupt angles with either dull or sharp dissection.

When the concavity is on the left side extend the incision across

nasal floor. Combined dull and sharp dissection will elevate membrane down to floor and freely expose entire septal ridge.

A successful operation requires: First, the separation of the membranes on both sides of the septum down to the floor and well beyond the area of cartilage and bone to be removed; second, the removal of all obstructing cartilage and bone; third, the operative field illuminated and open for inspection and instrumentation.

There is limited space between solid-bladed retractors for the passing of larger instruments. The Douglas hairpin retractors are entirely satisfactory. They are right-angled, with a further curved angle for convenience in holding. The operator holds one while the assistant or patient can comfortably hold the other retractor. The hairpin blades are long enough for deep inspection and give added space between them.

For removal of the perpendicular plate use forceps which work on the biting principle. The best of these are the Ballenger-Foster and the Jansen-Middleton forceps. Twisting it out with heavy forceps is to be condemned.

There remains the often dreaded vomer which forms the obstructing ridge in these deviations. Most operators completely remove this. Some advocate separating it from its floor attachment by means of saw or chisel and replacing it in the median line. They claim that this is less difficult, and that there results a firmer foundation. As a matter of fact this crest does not add to the support of the nose. In the large majority of cases it is thickened, and even when relocated is an obstruction. In a few selected cases it may be relocated. It is easier and more satisfactory to remove the vomer than to replace it. When possible, fracture its attachment with Asche forceps and remove with grasping forceps. Otherwise drive Hajek's septal chisel into its floor-line of articulation and remove with forceps.

Most operators use some form of nasal packing after a resection. The object of packing is coaptation of membranes in median line and prevention of formation of blood clots. Packing unequally placed causes a deflection which may partially persist. Pressure should be equal on both sides, otherwise blood clots will form where pressure is least, with some organization and thickening of septum. The writer uses small flat rolls of gauze, cut to extend beyond limit of operation, and freely covered with the following ointment: Bismuth subnitrate

40 per cent. in white vaseline 60 per cent. The Douglas retractor can be used to hold edges of incision together while packing. Place rolls in each side alternately until both nasal chambers are full, and with moderate pressure. The packing is easily placed, remains clean and is readily removed. It is preferable to leave both sides packed for forty-eight hours.

The after-care consists in alkaline irrigation for a few days, and an oil spray until all discharge and crusting cease. Inspect septum during first ten days, as in spite of utmost care a septal infection may occur.

NOTES ON THE MODERN RADICAL MASTOID OPERATION

Frederick W. Colburn, M. D.,

Boston.

WHAT follows upon the assigned topic is presented with the full knowledge that the methods described herein are not original with the writer, neither are they all new to the readers of the Journal. The intent of this paper is to impress upon the minds of those who may peruse it a few facts that may be worth remembering.

The radical mastoid operation of today is made for the relief of a number of conditions that may exist in the temporal bone; namely,

Persistent suppuration of the tympanum and attic which has resisted appropriate treatment.

Caries in the attic, tympanum or antrum.

Cholesteatoma of the attic or antrum.

Fistula into the labyrinth and complications of any one of these. The radical mastoid operation, although carried out differently by different operators, is made with the same goal in view; namely, to obtain a cessation of the intra-tympanic discharge and the complete healing and epidermization of the whole cavity resulting from the operation.

The modern operation differs from the original operation of Schwartze and Zaufal more in technicalities and technique than in general scheme.

Whether the operator works backward from the external auditory meatus, as in the Stacke operation, or whether he enters the antrum through the mastoid cortex, he is working for the same ultimate result. He removes the external attic and antrum wall, the posterior and superior walls of the bony meatus, the tympanic membrane and ossicles, if present, and then after careful examination of the tympanum and antrum he proceeds to cleanse the entire cavity with the curette. This must be done with extreme care lest some injury may occur to the delicate structures in close proximity to the middle ear; namely, the facial nerve, oval window, external semi-circular canal and sigmoid sinus. All granulations or carious areas should be re-

moved. Careful search must be made for fistulæ into the labyrinth or through the tegmen. The orifice of the Eustachean tube should be either curetted or burred down to its isthmus, removing its lining membrane, with the intent of obliterating its lumen. This accomplished, the operator should turn to the mastoid and remove all overhanging edges of bone and with curette or burr smooth the wall of the entire cavity. This is essential to a successful result.

The facial ridge must now receive attention and its prominence removed with exceeding great care, using a protector (a tenotomy hook being the choice of the writer) over the external semi-circular canal, facial nerve and stapes, while another assistant at the same time should constantly watch the facial muscles on that side in order to detect the slightest irritation of the facial nerve as manifested by twitching of those muscles. Sharp instruments are essential, as a blow on a dull chisel may cause a slight check in the bone, invisible at the time, but sufficient to cause pressure on the nerve-trunk, either directly or by causing a slight hemorrhage into the fallopian canal, with resulting paralysis of the facial muscles.

The bony cavity now being prepared for the second stage of the operation the membranous canal is slit into one or more flaps, according to the particular case and the preference of the operator. These flaps are reflected into the cavity and either sewed into place or held in place by packing through the meatus. Originally the epidermal lining of the cavity was developed from these flaps alone, aided by an open posterior wound. This required daily dressings for a period of nine months, and at the present time it has been superseded almost entirely by some method of skin-grafting.

Practically all operators agree that skin-grafting is the proper proceeding and the only satisfactory means of obtaining the desired result in these cases, but they differ as to the particular method of applying the graft.

The earlier grafting was done by using small grafts planted in the cavity after it had become lined with good granulations. These small patches serve as islands from which the epidermis extends, finally closing over the entire secreting surface of the cavity. This, too, was a slow process. Today large grafts are applied, covering practically the whole tympano-mastoid cavity. These are as usual taken from the thigh, lifted on very fine silk muslin and applied either through

the enlarged canal or through the posterior auricular opening. They should be cut preferably about two inches long by about three-eighths of an inch in width, and should be placed so as to cover completely the entire cavity. This may be accomplished by placing the first well in, covering the anterior wall of the tympanum, the roof of the tympanum and upper portion of the inner wall of the tympanum and the tegmen antri. The second should cover the whole lower portion of the tympanum and the internal wall of the antrum. These may be placed before the posterior wound is closed. These grafts must of course be held in place by a light packing of sterile half-inch tape. This packing should remain in place for a period of six or seven days, at which time it should be removed and the cavity lightly dry-cleansed. This method in the writer's estimation is the best in practice, although other methods have worked well.

Another method which has served well in some cases is to close the posterior wound and pack the whole tympano-mastoid cavity with iodoform gauze or tape, and at the end of eight days remove and apply one large graft (two inches square) inserted on the end of a gauze plug with sufficient pressure to bring the graft into firm contact with all parts of the fresh granulating surface of the entire cavity. This, when it takes, is ideal.

In the radical operation for mastoid best results are obtained by the use of skin grafts of some type or other. In the writer's estimation the multiple graft is best and more easily applied. In the writer's experience grafts applied as a secondary procedure upon a fresh granulating surface have had less tendency to slough than when applied at the time of the primary operation.

A CASE OF SOFT CATARACT: EXTRACTION OF THE CAPSULE*

G. N. Seidlitz, M. D.,

St. Louis, Mo.

MY only reason for recording and reporting this case is that it represents a rather unique experience in my practice. All the other soft cataracts that have presented themselves to me for treatment have been dealt with in the usual manner.

Of course we all know that discission, repeated as often as necessary, is the customary method of operating on these cases; or, the less frequently employed but time-saving operation of linear extraction, by which the contents of the lens-capsule are expressed at once. In both of these methods, however, the capsule is left in situ.

Since I aim to emphasize merely the surgical aspect of this case, my paper must of necessity (and fortunately) be brief.

The patient, a woman of somewhat delicate constitution, thirty years of age, claimed to be in good health. She was more concerned about the unsightliness of the pupil of her right eye, which was dull white, than by the fact that it was blind.

A careful examination showed that light-perception was normal. She was made to understand, however, that even if operative result was technically perfect, vision might not be first-class. She was also assured that glasses would be of no value to her in the same event, even though the perceptive apparatus proved to be normal.

One objective symptom was significant, viz.: a small sector of the iris at its inferior margin was slightly tremulous. This denoted a detachment of the zonula.

The operation was done in a hospital. The pupil was fully dilated by atropia. The eye was thoroughly cocanized. An assistant held the lids apart by means of an elevator held in his right hand for the upper, and his left thumb for the lower; he stood at the patient's left side Standing behind the patient's head I made an incision with a keratome at the upper border of the limbus, at the same time gently thrusting

*Read before the annual meeting of the O. O. and L. Society at Chicago, June, 1915.

the point of the instrument through the lens-capsule. Upon withdrawing the keratome the entire yellowish-white watery contents of the capsule exuded through the corneal incision.

The pupil, however, had not changed its color. If left in this condition the result of the operation would have been nil. Bearing in mind the existing slight detachment of the capsule, I decided to try to remove it entire. This I succeeded in doing by patient, teasing manipulation with a cystotome. I used a cystotome because I had at hand no instrument resembling a blunt hook. The tough, fibrous character of the capsule prevented the point of the cystotome, inserted within its interior, from damaging the iris or cornea. Immediately after the removal of the opaque capsule the pupil was black, and of course the patient could see large objects.

The cosmetic result of this operation was gratifying to the patient; her right pupil had the normal appearance of its fellow.

After the eye became quiet, examination with the ophthalmoscope revealed an old choroiditis in the macular region, and nowhere else. Of course central vision for patient was out of the question; peripheral vision is good.

I made no attempt to ascertain the cause of this cataract simply because it was not feasible. A Wassermann reaction might have proved something. The cataract was first observed when the patient was a little girl. The left eye was normal in every respect.

A year later the patient was perfectly satisfied.

DISCUSSION

C. Gurnee Fellows: I enjoy discussing cataracts and enjoy operating them. If I could persuade you all to send your cataract cases to me I should be glad to do nothing but cataract work, but I suppose you like to do it yourselves.

The point I get out of the doctor's paper is that he attempted to do something that many other people are afraid to try, namely, going back after the capsule after the lens is out. Moreover, he could not get the instrument he wanted, but had to take one not especially adapted for the purpose, and succeeded. In spite of lack of facilities he delivered the goods. Probably we all have had similar experiences. I have sometimes performed operations without a head-mirror and without the knives that I ought to have had. This performance of Dr. Seidlitz is decidedly worthy of commendation.

I have changed my mind about operating on a cataract when one eye is out of commission. I refused a great many times to do it, then I allowed myself to be persuaded to operate, and in those cases have always been glad that I had yielded, especially when the operation was a success.

G. N. Seidlitz: In a case of traumatic cataract, would you go after the capsule?

C. G. Fellows: That depends upon the conditions. I would not if it was perfectly transparent; then there is no reason for going after it.

G. N. Seidlitz: The feature of the case, described in my paper, which I wish to emphasize, is extraction of the capsule in operating on a *soft* cataract. After reading all I had time for on the subject I came to the conclusion that my case was rather unique. In this particular case there would have been no benefit at all without extraction of the capsule. Tremulousness of the iris (a small inferior sector thereof) of course induced me to undertake the procedure. I was astonished at the result obtained. I have tried extraction of the capsule in senile cataract, and got good results in some cases, but that is a different proposition. In senile cataract pressure is used in extracting the capsule; this is the rule. In this case, however, I used traction alone. I do not think I have ever read the technique of this little operation.

REMARKS ABOUT CATARACTS*

C. Gurnee Fellows, M. D.,

Chicago.

I AM led to make these few remarks about cataracts because the journals are full of experiences with the Smith operation. So far as I can judge, the oculists who have visited Smith in India and have been permitted to operate upon a few hundred cases are enthusiastic about it.

Those who have their information second or third or fourth-hand and attempt the operation, are pleased with their successful cases and disappointed at the failures.

The great majority of oculists, who have only a few cataract cases a year, should not attempt any new or extremely technical methods without a much wider experience than they can possibly gain by such infrequent practice.

Hence, in a general way, it seems to me good judgment for the majority of oculists not to attempt the Smith operation, and I believe this is the advice also of those operators who have visited Smith.

Without going into the merits of this method at this time, I wish to record some of my thoughts and experiences with the other well-known methods and to add a little in reference to my recent practice.

In June, 1914, Dr. Homer Smith, of Norwich, N. Y., published his reports of the preliminary capsular operation, and has since followed it up with later reports and experiences, and his article has received indorsement from many well-known men. From the casual way that references are made to it I am of the opinion that it has not been widely practiced, and that it deserves much more serious consideration than it has thus far received. For instance, Francis B. Kellogg, one of our own members, reports in our February Journal his results of cataract extraction with preliminary iridectomy, irrigation and discission.

He remarks that in one case he performed the Homer B. Smith operation of preliminary capsulotomy, and, in reference to it, says he

*Read before the annual meeting of the O. O. and L. Society at Chicago, June, 1915.

regards the procedure as a distinct addition to the resources of the oculist.

This is about the type of reference that I have seen, and here I want to recommend more emphatically this procedure, which I think adds much of safety, is far less dangerous than the Indian operation, and can easily be performed by any man who is capable of doing any cataract operation.

I have used this preliminary capsulotomy in some cases of senile cataract, and the results have been all that could be desired, but its particular field is in immature cataracts, where we so often strike sticky lenses which do not come out clean, which leave cortical substance behind, and are apt to be sensitive, slow in recovery, and less than perfect in vision. I have operated a number of immature cataracts in my clinic that I would not formerly have attempted, and my results have been so good that I shall certainly continue, and suggest that you try the same procedure.

As an instance I want to refer to a young laboring man, under thirty-five, with a cataract developing after some slight traumatism, but not directly due to the blow on the eye. With one good eye left it would not be my usual practice to operate on this eye, but we know that our clinical hospital patients in running around may not always get the best advice at the time when they most need it, so, for the sake of the ultimate good of this young man, I did a preliminary capsulotomy with subsequent extraction, with the best possible results. The lens was soft, gelatinous, sticky, and yet came out perfectly clean, as a result I believe of the preliminary capsulotomy.

I have had quite a number of cases which have done so well that I am sure the success warrants my continuance with this method of operating. One of my cases was a comparatively young woman, about fifty, who was groping around without useful vision. In one eye I operated by preliminary iridectomy and extraction, and the other by preliminary capsulotomy and extraction. The former eye has 20/40 and J3, the latter has 20/20 and J1.

Of course this does not prove that the second operation is the best, but I am very glad I did it in this particular case.

Another patient, a man of forty-four, who had lost his life-long position because of failure of sight, is within a few months doing a very successful business of his own, wearing a Kryptok bifocal, with

20/20 and J1. As yet I have had to do no secondary discissions on any of the cases.

My method of procedure is to do a preliminary capsulotomy with a stop knife-needle or with Homer Smith's special knife early in the morning, followed by extraction in the afternoon. In no case have I allowed the patient to go over night.

In a couple of cases the lens has followed my knife on completing the incision, but in no case have I lost any vitreous.

One other point of technique which I commonly add is the lavage of the anterior chamber with normal salt solution.

I should be glad to hear the experience of others if they have used this method of operation, and if not, would beg you to try it and report the results, so that we may decide whether it should be adopted more universally, striving always to find the best.

DISCUSSION

G. A. Suffa: Major Smith advises removal of the capsule in all such cases. Within two months I had a case of a boy eight years of age that had been needled three times for congenital cataract; these operations were a failure, as there remained a dense capsule retaining a thin layer of lens matter that completely covered the pupil. I made a linear incision in the cornea and with a small iridectomy forceps removed the capsule and cortex covering the pupil. Healing was uneventful. My assistant at the clinic saw the case later and found vision good, and a clear pupillary area.

R. S. Copeland: I suppose it is heresy to ask this question, yet it is always in my mind whenever we are discussing the operation for cataract: Why do we make this preliminary operation? The reasons that are usually given for it do not satisfy my mind. I can say for myself that my experience leads me to believe the preliminary operation exposes the patient to an unnecessary risk without materially increasing his chances of useful vision. I believe this is true of any sort of preliminary procedure for cataract. I see no reason, for instance, for the preliminary procedure such as has been suggested by Dr. Fellows. All such, it seems to me, increase the risk of infection and by omitting them that risk is materially lessened.

So far as the use of sterile normal salt solution in the globe of the eye is concerned, I have used it whenever it seemed necessary and had no fear of it. I think I have mentioned, at some of our meet-

ings, a patient I had fifteen years ago, where immediately after the delivery of the lens there was a gush of vitreous and the eyeball fell in like a collapsed football without air. I irrigated it and filled it with normal salt solution with a hypodermic needle and there was as fine a recovery as ever I saw; there was no detachment of the retina after five or six years of observation.

As the subject of the paper is a broad one, may I ask if any of you are familiar with the very remarkable experiments of Professor Burge, of the University of Illinois? They were made for the purpose of ascertaining the cause of cataract or at least of throwing some light on it.

The experiments performed by Professor Burge were made at the laboratory of the Incandescent Bulb people, of Cleveland, Ohio. They were very careful and elaborate experiments. First, he determined by careful analyses the difference in the ultimate chemical constituents of cataractous lenses as compared with normal lenses. He found that there was a difference which consisted in an increased amount of earthy salts in the cataractous eyes, especially lime and silica. This was very gratifying to me because I have maintained for a long time that such was the case, although I did not have any chemical experiments to back me up. He also used lenses extracted from animals—normal lenses—and kept them under water and subjected them to the action of heat. Of course he did not allow them to get cooked. He observed the effect of this and of other exposures, such as heat and light radiations, and to various irritant influences. He found that heat had only a very superficial influence in producing opacities. Exposure to light without heat had no perceptible effect upon normal lenses, but when they were suspended in a solution of lime and exposed at the same time to the ultra-violet ray they became opaque almost immediately. The conclusion was first, that salts, especially lime salts, were increased in the vitreous and in the lens, and, second, that under those conditions the ultra-violet rays were very destructive to the transparency of the lens tissues. I think some of you will remember that I have maintained at some of our meetings that the lime salts in drinking water were responsible in a large measure for cataracts. I had an assistant named Reed while at Ann Arbor who made almost identical experiments and came to about the same conclusions. He used the radiant energy of electricity to produce the changes.

He found that when the electric current had thus produced an artificial cataract that by reversing the poles he could dissipate the opaque condition; in other words, he could "cure" the artificial cataract. These are interesting experiments because they throw some light on the cause of cataract. The practical point is that when patients are threatened with cataract to see that they avoid lime salts in their drinking water and especially to look out for the ultra-violet rays. It is a subject in itself worthy of a whole afternoon's discussion.

G. A. Suffa: Do the violet rays act the same as the ultra-violet?

R. S. Copeland: No, the exposure has to be below the violet.

Vice-President Sage: This is the only paper we have on cataract, so if you want to talk about cataracts now is your chance.

G. A. Suffa: Why do you extract so quickly after opening the capsule? Has time enough elapsed to get the full effect upon the posterior cortex so that the lens will come out easily and fully? I had a case suitable for the Major Smith operation but I failed to find anyone in Boston who does the Major Smith operation, therefore I needled the capsule. The next morning the anterior cortex was completely opaque; as there was no undue reaction I waited a week before extracting the lens to give the posterior cortex time to mature. A layer of opaque posterior cortex remained when the lens was delivered. During its attempted removal the patient became unruly, so that it was deemed advisable to cease further effort in that direction. After a week of normal reaction a severe iritis set in, lasting for several weeks, that completely occluded the pupil.

J. A. Campbell: It has always seemed amusing to me when an operator makes too much depend upon some particular knife or speculum or some other instrument; the success of an operation never depends upon any particular knife or speculum; it is the personal element that enters into the success or failure of an operation. Hence I have derived amusement by reading articles written by men who have watched Dr. Smith operate and noting how much weight they put on non-essentials. Undoubtedly the intracapsular operation is the ideal operation for cataract because you get the whole thing out at once. If you leave the capsule in you are bound to have more or less of capsular shreds. Dr. Knapp told me that in fifty per cent. of his cases he had to make a second operation to get the capsular shreds out. Like every other operation there are numbers of little things

upon which success or failure depends. I have seen the best operators and some of them I have felt ashamed for, and as to others I have been anxious to do half as well in my own work.

One of the causes of failure, I think, is making the incision too small; when you attempt to express the lens through a small opening you have to make too much pressure and you will leave shreds behind, but if you have a large enough opening the lens comes without pressure, almost of itself, and you get a clean result. How many of you have seen genuine black cataract? They are not common. I have seen one in twenty years, and that was recently. Invariably the lens so affected is larger than the ordinary. This one was the largest lens I ever saw. I made a large incision; it was through half of the cornea, and the whole thing—lens and capsule—came out easily. It makes no difference whether you do it with this knife or that knife, so you get the incision right, graded according to the circumstances of the case and your own individual judgment and experience. I have heard or read that there is loss of vitreous in eight per cent. of all intracapsular operations; it depends upon the pressure you make. I have seen operations by celebrated men with loss of vitreous in which I think that the loss was absolutely their own fault. In regard to washing out the chamber I feel much in accord with Dr. Fellows. I always have the things ready to do it with, but in very few cases do I use them. The more I see of the intracapsular operation the more I think of it; it is the ideal. But every man must use his own judgment in operative work. I have seen men fail just because they followed some other man's advice instead of following out their own ideas.

N. Bentley: I would like to ask how soon he operates and what kind of operation he prefers in men of thirty or so—young men?

A. C. Clapp: I would like to know whether the incision ends in the cornea or goes to the scleral margin.

R. S. Copeland: It is my observation that loss of vitreous is more apt to come in making the toilet of the wound than from the operation itself. We are too fussy about fixing up the wound. When I have had loss of vitreous it has always been after the successful removal of the lens. The intracapsular operation is certainly the ideal; in quite a series of cases of that operation I noticed entire absence of iritis.

J. A. Campbell: Do you always make an iridectomy?

R. S. Copeland: Yes, I do.

J. A. Campbell: Smith does.

R. S. Copeland: I do not mean a preliminary iridectomy, but one at the same sitting.

Burton Haseltine: Do you do iridectomy when you extract?

C. G. Fellows: Yes.

Burton Haseltine: Only in young cases?

C. G. Fellows: For young people and for mature cataracts, also when the patient has still one good eye left.

G. A. Suffa: Do you do it on senile cataracts?

C. G. Fellows: I see nothing to recommend it in senile cases.

C. E. Williams: Would you recommend it in traumatic cases?

C. G. Fellows: As I said before, that depends upon circumstances. I have done things because I was hunting after experience.

J. A. Campbell: Those who use the Smith operation advise it in all firm cataracts. I have had the cornea collapse right against the pupil after the corneal section in elderly persons. Would it be wise to perform Major Smith's operation in such a case?

R. S. Copeland: If that had been my case I would have filled up that chamber with normal sterile salt solution.

J. A. Campbell: Bakers frequently have cataract in one eye because they shut one eye in looking into the oven; glass blowers have the same trouble, so that heat does seem to have something to do with cataract.

R. S. Copeland: You have to have other factors present also; namely, increase of the salts and the violet rays. If your baker or glass blower has diabetes then he is headed for cataract.

J. A. Campbell: Not all diabetics have cataract.

R. S. Copeland: No more do all bakers and glass blowers.

C. G. Fellows: So far as the discussion goes I have not heard anyone really discussing the Major Smith operation at all. To simply say "extra-capsular operation" does not imply the Smith operation, for there are several ways of doing that and Smith's is a particular one of them. Try his operation and let us know next year what you think of it. I sat next to Dr. Homer Smith at a meeting and talked with him, and I was much impressed with his personality and his ability to express himself. It is just as Dr. Campbell said, the personality of

the operator counts for more than the instruments he uses.

No one should begin with the Smith operation. No one should use it until he has done a few thousand operations by the ordinary method. It happened that I did it years before I knew what it was by name. At the first cut everything came out, and I filled the eyeball with sterile salt solution and the case got well. The loss of vitreous does not scare me any more than it does Dr. Copeland. I have grown not to fear sterile normal salt solution. I assure myself that it is sterile by taking a sterile solution and resterilizing it.

Dr. Sage wants to know how long to keep on teasing out debris after delivery of the lens. I keep on very gently teasing out fragments until the pupil looks black.

Dr. Copeland asks why ever perform a preliminary operation. I do not now do a preliminary iridectomy. I did it a good many times, but not seeing the good results claimed for it ceased doing it as a routine.

I have changed somewhat in my feelings about operating on cataract early in life. I draw my conclusions from circumstances instead of routine. If a patient has a good eye to fall back on I am much more inclined to operate than I used to be. Traumatic cases, soft cataracts and cataracts in people under fifty are the ones in which I certainly prefer to use a preliminary capsulotomy rather than do the whole thing at one sitting. Why not wait a few hours after opening the capsule? Why not wait a week if necessary? There is a reason for waiting; the opening allows the aqueous to get into the lens, or is supposed to, so that it comes out with comparatively little danger. My preference is to slit the capsule in the morning and operate in the afternoon, doing the whole thing between sunup and sundown. In some cases the lens has followed my knife without pressure, so there may be some danger of too great swelling of the lens if you wait too long. I do not advocate waiting too long. The pupil should be dilated with atropin, early in the morning of the day on which you are to operate.

Since this mode makes it possible to operate upon young people and get results, I think well of it, and believe it worthy of trial whenever I have such cases. I would rather do the whole thing on the same day than do a preliminary operation and wait a week or a month. I did one on Friday and the patient went home on a street car on

Monday.

R. S. Copeland: A private patient, was it not?

C. G. Fellows: Yes, he was a private patient and paid his bill before the operation.

America's Red Cross in Europe. The following is an extract from a report by the Chairman of the National Relief Board of the American Red Cross for the first year of the present European war:

"Over 10,000,000 cigarettes reached us for the Allies and German-Austrian armies.

"More than a million yards of gauze have been contributed; 211,000 hospital uniforms, over a million surgical dressings; 31,000 pounds of anesthetic; 892,000 pounds of cotton, absorbent and otherwise; 209,000 articles of clothing for refugees; 70 cases of typhoid and tetanus antitoxin; 10,000 smallpox vaccine tubes; 29,000 mufflers, and 28,000 pairs of socks.

"Money was donated for the Sanitary Commission which went into the Balkan States to fight typhus. We purchased and shipped great quantities of supplies for them, including 358,000 pounds of sulphur, 700,000 bichlorid tablets, 7,000 gallons of kerosene to use in spraying for the destruction of typhus-carrying vermin, 5,600 pounds of formaldehyd, 12,200 doses of cholera vaccine, 500 whitewash brushes, 3,000 rolls of ribbon paper, to be used in pasting windows to make rooms air tight for fumigation, hundreds of barrels of old flour for making paste, many spray pumps, 35,000 gallons of phinotas oil, 70 bathtubs, 50 stepladders and 11 automobile trucks.—From *The Literary Digest.*

GLAUCOMA: A NEW THEORY AS TO ITS CAUSE AND PATHOLOGY*

C. A. Harkness, M. D.,

Chicago.

BEFORE presenting this new theory or idea to the consideration of the members of this society I wish to make it plain that I do not expect to revolutionize the present accepted theory or theories at once. Also I desire to state that I know that much of what I shall say has already been written, but I differ with the writers in regard to the conclusions which they reach, and this difference gives rise to this new pathology. While I have proof to substantiate my claims I realize that there are many here with more knowledge, and who have had more experience, who may be able to bring forth greater argument and more testimony to support what we have so long accepted as the cause and pathology of glaucoma. It is for this reason that I am advancing this as a theory and not as an established fact. Before condemning my theory may I ask for it a fair hearing and a careful consideration.

Glaucoma is, as is well known, a hardening of the eyeball due to an increased pressure or tension. The other symptoms present in it are a result of this pressure.

The thing then to consider is what pathological condition exists that causes this increased tension. First—Is it due to an increase in the quantity of the fluids in the eye? Second—Is it due to a hardening or thickening of the sclera, with a resultant shrinkage of the eye so that even a normal amount of fluid produces increased pressure? Third—Is the amount of fluid secreted normal, the size of the eye normal, but a blocking of the exits of the fluids the cause of the heightened tension? These three causative factors seem to cover all of the theories so far advanced, although the colloid theory has had some followers recently. Probably all of them have been ruled out except the third.

For many years we have believed that the increase in pressure was due to a blocking of the canal of Schlemm, the drainage channel

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of the aqueous chamber. Proof of this condition has been furnished us by the pathologist and we have accepted this as the cause of glaucoma. While not claiming that this closure does not occur, I do claim that it is secondary rather than primarily the cause of the increased tension.

Clinically, in glaucoma we find in addition to the increased tension a shallow anterior chamber, the iris pushed forward and often adhering to the cornea, the lens pushed forward and often dislocated and practically no aqueous humor. Could such clinical conditions exist if there was only a blocking of the canal of Schlemm?

If one takes a vessel and divides it into an anterior and posterior chamber by means of a membrane and fills both sides with water so that the pressure is equal on both sides of the membrane; then has an opening from the anterior part so that the water escapes from it equally with an inflow from the posterior chamber, the membrane will not bulge in either direction. Shut off the outflow but allow the inflow to remain the same and the membrane will be pushed back into the posterior chamber. But as I have said, this does not occur in glaucoma; in fact the very opposite conditions occur. Therefore we are led to believe that the present theory as to the cause of increased tension is wrong.

If the aqueous humor is secreted by the ciliary body and it continues to pour its secretion into the aqueous chamber, and the canal of Schlemm is closed, there should be an increase in the amount of aqueous, whereas if there is a decrease the lens and iris should be displaced backward and the aqueous chamber should be deeper, none of which occurs. These physical and clinical findings then seem to absolutely disprove the old theory that the closing of the canal of Schlemm is the actual causative factor in producing the increased tension in glaucoma.

What then is the pathology in this disease? To answer this it will be necessary to consider the histology of the eye briefly. First—What produces the aqueous humor? We have ordinarily believed it was secreted by the ciliary body. Now I am not able to say positively that part of it is not, but I do advance as part of my theory that most of it comes from the vitreous.

Second—I must call to your attention the erroneous idea held by us for so long in regard to the vitreous. Formerly it was said to be

a structureless, gelatinous mass filling the chamber posterior to the lens. Where it came from, whether if any escaped during an operation there was more secreted, and so forth, have long been subjects of discussion. This is not to be wondered at when the difficulty of preparing the eye for microscopical examination is considered. Fortunately we are now able to freeze the specimen quickly and by special stains to examine the vitreous carefully. Salzman says that no longer are we justified in believing it without structure. Rather it is a highly refractive substance with lymph channels running through it, thus supplying it with nourishment. It is impossible in the time allowed to this paper to go into detail as to the minute histology of the vitreous, but I will attempt to give the most important facts in regard to it. The base is attached to the retina and is the thickest part. Spreading like a fan it fills the entire vitreous chamber with fine fibers separated by these minute canals, very similar to the substantia propria in the cornea. Probably all of these channels lead to one central one, which extends from the retina to the lens, ending in a small space just back of the lens. This central canal has been demonstrated by Stilling, Schaff and Bribach. Some question as to the existence of this canal and its ending has been raised by Wolfrum, but the work of Schaff and Bribach seems to prove its presence. They have succeeded in injecting the canal and have made stereoscopic pictures after injecting it. So then when we have had our frightful losses of vitreous, we have had only a loss of lymph and not of vitreous, as it is a body practically completely filling the vitreous chamber.

Third—Both Fuchs and Salzman speak of the canal of the lens, which surrounds the lens and allows the fluids to pass from the vitreous to the aqueous chamber. This is also contradictory to our idea of no communication between the two.

Fourth—Present day knowledge has taught us that the lens does increase in size as we grow older instead of remaining the same size, as was formerly believed.

These additions to our knowledge of the histology of the eye leads to the belief that the aqueous humor is largely the lymph which passes through the canals in the vitreous and nourishes it. After all the nutriment has been extracted it passes from the vitreous chamber into the anterior or aqueous cavity through the circumlental space

or canal.

If the lens grows too large, or if it absorbs this lymph and swells, then the canal becomes blocked and prevents the escape of the fluid from the vitreous chamber with a resulting increase in tension. This pressure from behind forces the lens forward, the aqueous chamber is made shallow, the aqueous humor disappears and secondarily the spaces of Fontana are blocked.

All of these conditions are noted by Fuchs, who also calls attention to the fact that glaucoma practically always occurs in hypermetropes. He says in regard to these cases: "A genuine glaucoma develops only in an eye which has a predisposition to it. This predisposition depends on insufficient spatial relations. These affect the eye as a whole and particularly the region of the anterior and posterior chambers. The hypermetropic eye is smaller than the normal eye, its anterior chamber is shallower, its ciliary processes protrude more than usual because the ciliary muscle is hypertrophied on account of the constantly maintained accommodation and the lens is the same size as in the emmetropic eye. Hence the hypermetrope does not get glaucoma as long as he is young, but gets it only when with advancing age his lens becomes too big for the eye, for then the space between the lens and the ciliary processes becomes too small. It is through this space, the circumlental space, that the lymph flows from the vitreous to the aqueous cavity. When this space is contracted the lymph becomes dammed up in the vitreous. The latter consequently increases in volume, pushes the lens and iris forward and thus makes the shallow anterior chamber still shallower."

He differs with me only in that he does not recognize that blocking the exit of the fluids from the posterior chamber decreases the amount of the aqueous and closes the canal of Schlemm.

Further evidence of the truth of this statement of the conditions causing glaucoma is found in some of the forms of treatment which have been used. One of the much praised treatments was the injecting of normal saline solution into the anterior chamber. This gave some excellent results, as it pushed the lens back and allowed an escape of the pent-up lymph. Osmosis also assisted in reducing the secretions in the posterior chamber.

Massage of the eye in some cases gave temporary relief and has been recommended. No doubt the good from it was due to the fact

that it pressed the lens back and so opened up the canal of the lens.

Sclerotomy no doubt drained the vitreous rather than the aqueous chamber of the eye. It has been one of the most successful operations for the disease.

Iridectomy is successful in some cases, but, when it is, it is probably due to the fact that in pulling out the iris enough force is put upon it so as to tear back into the vitreous chamber.

Trephining is probably giving its successful results because it opens both chambers.

Vail, of Cincinnati, reports putting silk thread in the posterior or vitreous chamber as a drain and curing a case where all other methods had failed.

Schwenk, in the *Annals of Ophthalmology,* recommends the removal of the lens to relieve the tension.

Lindsay, in the *Archives of Ophthalmology,* recommends inserting a broad needle into the vitreous and allowing the fluid to escape. He says it gives immediate relief.

In a recent number of the *Annals of Ophthalmology* several cases were reported where silver wire had been introduced into the posterior chamber to drain it, with perfect results.

Many of us have seen glaucoma follow when an injury has caused the swelling of the lens.

These findings have led me to believe that glaucoma is due to the closure of the circumlental space, thus preventing the escape of the fluid from the vitreous chamber, with a blocking of the canal of Schlemm as secondary rather than primary.

In addition to the swelling or increase in size of the lens we may of course have an inflammation of the choroid or vitreous, thus producing an increase in the amount of secretion so great that it cannot be carried away fast enough, and so get increased tension. This was the idea of von Graefe, who believed that there was a serous exudate from the choroid, a serous choroiditis he called it, which increased the amount of fluid in the eyeball. That this is seldom the case there is little doubt, as it is well known that if liquids are injected into the eye the tension is increased but for a short time, showing that nature quickly increases the outflow if the inflow is larger than normal.

To me the most reasonable explanation of the cause of glaucoma is the closing of the circumlental space, preventing the escape of the

lymph from the vitreous chamber with a resultant pushing forward of the lens and iris, the decrease in depth of the aqueous chamber, a blocking of the canal of Schlemm and a congestion of the veins of the eyeball. This probably is usually due to the enlarging of the lens.

As to treatment, I must confess that what I have to offer is a theoretical suggestion and has not been proven clinically by me. If I am correct as to my pathology in this disease our treatment must be radically different from what has been accepted. We must drain the vitreous rather than the aqueous chamber. This of course can be done in several ways, such as the silk thread or silver wire drains, which have already been used, or the intracapsular extraction of the lens. This has been done successfully, but unfortunately the vast majority of us are not sufficiently skilled in thus removing the lens and so it becomes necessary to find some other means of drainage.

I would suggest the following operation: Incise the conjunctiva above the external rectus muscle, the same as for a strabismus operation. Pick up the muscle and separate about one-third of the fibers from the rest of it, leaving this much, or more if possible, to control the movements of the eyeball. Sever these fibers about the middle of the muscle, having placed a clamp on the end nearest the cornea. Then make an opening through the sclera into the vitreous chamber; insert the cut end of the muscle into the opening and suture it there. Allow the sutures to remain until the scleral wound is healed, leaving the muscle as a permanent drain. The circulation being from below upwards in the muscle a new lymph channel will be produced so that the vitreous chamber will be drained without any foreign body being introduced into it.

Another mode of operation has been suggested by Dr. E. J. George. It is as follows: Incise the conjunctiva over the tendon of the external rectus muscle, separate the fibers between the primary and secondary attachments of the muscle, hold the fibers apart with hooks and trephine between them through the sclera. Allow the fibers to come together and close the conjunctival wound. Wounds in the sclera heal, but the cicatrix acts as a filter always. This will allow an escape of the lymph and so drain the vitreous chamber. I hope later to be able to give you more in detail as to the results from these two or some similar operation.

These then are my conclusions, which some of you with greater

experience and knowledge may be able to disprove:

1. Glaucoma is due to a closing of the circumlental space or canal of the lens, thus blocking up the secretions in the posterior or vitreous chamber, this closure in most cases being the result of the lens becoming too large.

2. Closing of the canal of Schlemm is secondary and is not the primary cause of increased tension.

3. Treatment to be effective must be directed towards the vitreous chamber and some means for permanent drainage of it must be found.

In closing I wish to express to Drs. A. C. Tenney and J. A. Toren, of Chicago, my appreciation of their assistance in suggestions as to histology and treatment.

29 East Madison Street.

DISCUSSION

Edgar J. George: This is an excellent paper and opens a new line of thought to us all, as it goes into the minute anatomy of the vitreous body and describes its lymph spaces and also the canal around the periphery of the lens. I do not agree with the essayist that the swelling of the lens is an etiological factor in glaucoma, but I do agree with the idea that glaucoma is the result of edema. In my opinion it is due to a swelling of the colloidal tissues according to Fisher, and is the direct result of a vascular disease. The swelling of the tissues blocks the peripheral canal of the lens and other lymph spaces, as mentioned by Dr. Harkness; consequently the vitreous body is increased in volume, the lens and iris are pushed forward, and the aqueous humor lessened with the increased intra-ocular tension, which Fisher has found to be due to an acid condition.

The operation which Dr. Harkness suggests might prove to be very good, though I have never tried it. The operation which I have been successful with the past year for glaucoma is subconjunctival iridectomy, the same as performed by De Wecker and discarded by him some years ago; why I do not know. I hit upon the operation accidentally. I saw a case that had been operated upon with success some years before. The tension was reduced and remained normal. I studied the case and came to the conclusion that the success was owing to the fact that in performing the iridectomy the operator had gone back into the sclera. So I began to perform subconjunctival

iridectomies for glaucoma and have had good success.

I begin by entering my keratome two millimeters back of the sclero-corneal margin and pass the knife directly in, and try if possible to bring the point out just beneath or at the junction of the iris; then I tilt the point of the keratome upward and pass into the anterior chamber. After the knife is withdrawn I catch the iris at the pupillary margin with forceps and draw it into the wound, cutting it off close to the incision. In most of the cases the remnant of the iris was left in the wound, which was buried beneath the conjunctiva and afforded drainage. In a few cases it was not. But I noticed it had the same effect in reducing the tension as if it had been left in the wound. This I think is due to the fact that the cicatrix of the scleral wound never becomes as firm as that of the cornea; consequently filtration takes place regardless of the iris. This operation has proven of service to me both in the acute and chronic cases. Although in acute glaucoma the tension is not relieved for several days, due to the inflammatory condition, in cases of simple glaucoma it was immediate.

J. A. Campbell: The word glaucoma covers a multitude of theories; a new theory comes out at least every year. But still we have glaucoma with us. After giving a great deal of attention to the subject and the many theories advanced, and having heard many papers on the topic, I am more convinced than ever that glaucoma is a reflex neurosis. The more I see of it the more sure I am of the truth of this. I want to say something about swollen lenses; if swollen lens is the cause of glaucoma then every case of injured lens ought to have glaucoma. I have seen a thousand cases of injured lens that did not have one symptom of glaucoma. It is sometimes seen in children. Von Graefe's theory was that it was inflam ation of the choroid. Another very popular theory is that it is due to impeded filtration at angle. That seems to me not a universal cause, because the infiltration angle lies all around the lens; it is not simply at any one point. Suppose you do open up one small point, what are you going to do with the rest of that obstructed angle?

As to acute cases, eserine is about the best treatment, as many reported cases prove.

The obstruction of the filtration angle is, in my opinion, more a result than the cause of glaucoma. The obstruction of the filtration

angle is not a thing of a few hours' time, while glaucoma often comes like a flash. I recently had a case of long standing in which the anterior chamber was almost gone because the lens was pushed forward towards the cornea, and yet there was no sign of glaucoma. The filtration must have been stopped up for years in a case like that. That theory is either true or it is not. If true, why do we have so many cases in which it does not cause glaucoma?

I am sure that there must be something back of all this. Why has Jonnesco's operation for glaucoma been made? What has cutting the ciliary nerves to do with it? You cut the sympathetic and you have diminution of tension; stimulate the sympathetic and you have increase of tension. In what other way can you produce such a rapid change of tension? The tension of the eye depends upon the sympathetic nerve and that theory is the only thing that can explain how some of the cases have the sight go out like a flash. In a paper I wrote some time ago and which was published in the transactions of this society upon this subject I reported nine or ten cases to show this. How do you account for glaucoma occurring after cataract operations if the filtration angle is at fault? It is impossible.

F. C. Sage: Have you ever used gelsemium?

J. A. Campbell: Yes, sir. It is a very much used treatment.

E. J. George: Is it not possible that glaucoma subsequent to cataract operation is due to posterior synechia? That might be possible.

W. M. Muncy: I have enjoyed this most interesting paper, though so difficult a question as the cause of glaucoma could not be expected to be settled in so short a time. We all agree on certain factors, as that an iridectomy helps in a direct ratio to the size and the amount of the root of the iris removed. We all have been disappointed in the results and have resorted to other procedures. If Dr. Ritchie were here I am sure he would make a plea for anterior sclerotomy; that is, making an opening into the posterior (aqueous) chamber. This is to be thought of particularly where there is hope of conserving vision. Where all vision is lost and it is a question of stopping the disease or removal of the eye, I have found that a posterior sclerotomy has so far always been successful. In performing the same always make an angular incision or trephine. Therefore, if the doctor had said that the cause of glaucoma probably lay in the vitreous chamber

with conditions foreign to the eye frequently by reflex action exciting the attack, I would be inclined to agree with him. But when he says it is due primarily to conditions of the lens his reasoning fails. A swollen lens may be one of the contributory causes, depending upon the rapidity rather than the amount. In the treatment of incipient cataracts with dionin I have followed the vision, tension and refraction, finding a diminished hyperametropia and an increase in opacity going hand in hand with a slight increase of tension without any other symptoms simulating glaucoma. I think it is only in the rapid development of cataracts in marked hypermetropes that glaucoma is found to be due to this condition. No one disputes that it is more apt to occur in nervous patients, especially if afflicted with grief. I have known patients to be so sensitive to noises as to have the telephone removed and the door bell muffled previous to an attack of glaucoma. Has not the nervous condition here changed the internal fluid secretions of the vitreous?

I hope the writer will pardon me if I criticize his use of the words anterior and posterior chambers as he has applied them to the aqueous and vitreous.

The anterior chamber is that part of the aqueous chamber anterior to the iris, while the posterior chamber is that part of the aqueous chamber between the iris and the lens and the ligaments of Zinn.

R. C. Reed: I have endeavored to study the various theories advanced as to the cause of the mysterious disease known as glaucoma, but none of them has fully satisfied my mind, though I have none of my own to offer.

I had the privilege recently of treating a case of glaucoma with Dr. Fisher as consultant. During the active application of his treatment the tension was somewhat lowered, but it returned promptly upon its discontinuance. This he attributed to general arterio-sclerosis, and pronounced the case incurable. As the glaucoma in this case attacked but one eye I have not been quite able to accept his verdict.

To me the real cause of glaucoma is still obscure.

A. A. Eikenberry: I would like to call attention to the fact that a number of cases of incipient glaucoma have been treated with osmium with success. The proving of osmium resembles the symptoms of glaucoma more than any other remedy. Also I can recom-

mend phosphorus and causticum in opacities of the cornea.

J. A. Campbell: Did the osmium change the filtration angle?

C. A. Harkness: I almost felt that I should apologize for presenting this paper just now because I have not been able to do the work upon it that I wanted to. When I wrote to the Secretary that I would present a paper upon this subject I thought that I would have the time to finish it better than I have been able to.

The colloid theory to me does not seem acceptable, because glaucoma always occurs in hypermetropes. I see no reason why it should not occur in myopes also if it is due entirely to the colloid. In regard to the filtration angle, I thought I had made it plain that glaucoma was not due to closure of the filtration angle, but my idea was that it came from a backing and damming up of the vitreous so that the canal which drained the vitreous was closed. The fact that it occurs in hypermetropes would lead one to believe that it was due to the lens being too large for the space. That a large nervous element enters into its causation is shown by the suddenness of the attacks in some cases. All of you have seen cases where people have gone suddenly blind. Not very long ago I had a patient, an old man, who went blind suddenly. He saw as well as anyone in the morning. He was out in Lincoln Park with his daughter. She called his attention to a bed of yellow flowers and remarked how beautiful they were, but he could not see them. They found that he could not see the red flowers either, nothing but grass. He had matured cataracts in both eyes. My idea is that the shutting off of the vitreous is so gradual that it requires some time before it gets to where it cuts off the vision and then it is first noticed and seems to be sudden.

In regard to the words used I thought I was using the accepted terminology. I think that they are so used in Fuchs, Salzman and others. I knew that anterior and posterior had been used in reference to the two chambers of the aqueous, but thought that they had been dropped. In order that there may be no confusion, however, I will make the changes in the terms used.

As to the suggestion that silver wire had been inserted into the eye twenty-five years ago without curing glaucoma, I would say that I did not claim it as anything new; rather I reported it having been used to drain the vitreous chamber, with a resultant improvement, as an indication that the seat of trouble was posterior to the lens and not in front of it.

SUCCESSFUL REMOVAL OF A BULLET LODGED IN THE REGION OF THE CAROTID ARTERY IN THE SKULL

William G. Shemeley, Jr., M. D.,
Camden, N. J.

OCTOBER 9, 1915. Patient, Mr. F., having attempted suicide by shooting himself with a thirty-two caliber revolver, was referred to the West Jersey Homoeopathic Hospital, of Camden, N. J., by Dr. W. H. Anderson, of Haddonfield. Upon admission patient was given fifteen hundred units of anti-tetanic serum, subcutaneously.

External inspection revealed a bullet wound of the right side of the head 2 cm. in front of the tragus. There also existed a severe powder burn of the skin. Severe hemorrhage was present from the right ear. Both pupillary reactions were equal and normal. Patient complained of impaired sight in the right eye.



Skiagraph of Transverse View of Skull Showing the Location of the Bullet, Taken Before Operation.

Otoscopic examination of the right ear showed the external auditory canal filled with bright red blood. The canal was wiped out with dry cotton and the membrana tympani examined. A jagged-edged tear was present in the anterior superior quadrant, from which blood exuded rapidly.

The hospital roentgenologist, Dr. H. B. Dean, x-rayed the case. The plates showed the bullet to be deeply placed behind the orbit of the right eye and on a line parallel to the external auditory canal. A probe introduced into the wound encountered the bullet at a depth of 6 cm. Examination of the fundus of both eyes by means of the ophthalmoscope revealed nothing of a pathological nature.

Dr. L. E. Griscom, the surgeon-in-charge, together with the author, determined upon operation as the rational procedure.

Patient was prepared for operation in the usual manner. No solutions of any character were allowed to touch the skin or wound, except iodin, 2½ per cent., followed with benzine and alcohol. The external auditory canal of the right side was packed with plain sterile gauze, outside of which plain sterile cotton was placed. A grooved



Skiagraph of Frontal View of Skull Showing the Location of Bullet.

director was introduced into the original wound down to the bullet.

An incision was made parallel to and at the upper border of the zygoma. The periosteum of the zygoma was reflected back as near intact as possible. A piece of zygoma 2 cm. long was removed and the periosteum pushed to one side. By means of an electric head mirror the upper end of the bullet was observed deep in the wound. The bullet was grasped in the jaws of a Peans artery clip and the forceps locked. While the nurse held the head firm the bullet was extracted from a position adjacent to the internal carotid artery. The wound was tightly packed with plain dry sterile gauze which was held firmly in place for several minutes. Upon removing the pack no active bleeding appearing, the wound was closed. A cigarette drain was placed in the original wound down to the bottom of the cavity. The skin was sutured with silkworm interrupted sutures. The line of sutures was touched with 2½ per cent. iodin. A fresh sterile gauze pack was placed in the right ear. The wound was dressed in the usual manner and the patient returned to bed.

The discharge from the right ear has practically ceased. Plain gauze drainage was the only treatment used. All appearances point to a complete and uncomplicated recovery.

He made an uninterrupted recovery. The cigarette drain was removed at the end of the second day. Plain sterile gauze preserved the small amount of drainage necessary.

Stitches were removed on the seventh day.

Patient out of bed on the solarium October 17, 1915.

STATISTICAL REPORT OF THE NEW YORK OPHTHALMIC HOSPITAL

From Dr. DeWayne Hallett we have received some figures, showing the work done at the New York Ophthalmic Hospital during the two hospital years just past, each ending September 30th.

	1914	1915	Increase
Patients in the hospital	24	39	
Patients admitted	1,064	1,466	
	1,088	1,505	417
CONDITION WHEN DISCHARGED.			
Recovered	981	1,389	
Improved	27	29	
Unimproved	1	9	
Transferred	5	5	
Otherwise discharged	29	40	
Died	6	8	
	1,049	1,480	431
Free ward patients	300	545	245
Private room patients	165	178	13
Clinic cases	12,720	13,350	630
Clinic treatments	42,739	45,533	2,794
Clinic prescriptions	53,872	57,581	3,709
Largest daily clinic	223	254	31

It will be observed that 9/10+ cases recovered, and also that nearly twice as many patients were given free hospital attention in 1915 as in the preceding year. The labor condition incidental to the European war is given as the probable cause for this increase.

At the same time, due to the energy of the present medical staff and the efficient management of the hospital, and in spite of the fact that the buildings are old and not now favorably located in regard to the quietness of the surroundings, there has been an increase in the number of private room patients. A large increase also occurred in the number of surgical cases, 719 in 1914 became 1,247 in 1915,

and in cataract extractions there was a 50% increase.

The need of a modern building with a proper modern equipment to house and care for the great work done by this institution, which is the only one in the world under control of homoeopathic physicians, is fully appreciated by the Boards of Directors and Surgeons and their energies are bent in this direction.

About the present site, Twenty-third Street and Third Avenue, it may be said that it is so hemmed in that the quarters cannot be expanded. All present space is fully utilized. Nor would it be desirable to expend money on new buildings in the present location, even if it were available and the persent ones torn down, the reason being that traffic on the street by surface and elevated railroad renders the section too noisy. This situation did not exist when these buildings were put to this purpose years ago.

While the corporation has some endowment and owns its property it still depends to a large extent upon voluntary contributions to meet its expenses, and these contributions failed in 1914 to be sufficient by a very material sum. By special effort during the 1915 hospital year this deficit was overcome and the 1916 year will start nearly even.

The property has lost in value during the last several years, owing to one of those curious shifts of business sections which seem rather characteristic of New York, where during the same period the entire wholesale lace, silk and ribbon trade has deserted Broadway, near Eighth Street, to locate on Fourth Avenue, and the retail dry goods from around Twenty-third Street to upper Fifth Avenue.

To consummate their plans for a new plant, properly located, will require a large sum of money, to raise which will be a great task. While New York is the home of great wealth, it is also burdened with a crying, ever-present and insistent demand upon those charitably inclined for the support and expansion of institutions devoted to the care and uplift of the indigent and needy population, not alone its own but of those from all over the country, who likewise make it their mecca in distress, and therefore, being one of many, the cry of the Ophthalmic Hospital often passes unheeded. It is difficult to create a special interest. The cost of going after contributions is often disproportionate to the sums secured.

For these reasons, only imperfectly presented, it is not unreasonable that this institution should feel some claim upon the benefactions

which might be inspired by their friends of like medical faith located elsewhere in this favored land.

Many physicians had their early post-graduate special instruction there and are now justly celebrated in their locality as eminent specialists. The College at the Ophthalmic has existed for many years and the instruction there given has been the joyful personal effort of its medical staff. No adequate return has ever accrued to the teaching staff.

The amount of time given to the hospital has left to many of them little of the opportunity they really needed to devote to pursuits calculated to improve their own physical well-being, and yet it is their desire to improve the post-graduate course, to take greater advantage of the ever-present enormous clinical material for educational purposes.

To do this, to provide the laboratory facilities, the x-ray room, the lecture and operating rooms in proper number, the dressing rooms, etc.; in short, to have that which must be had to fulfill their aspirations, requires nothing less than a modern plant in a new location.

ABSTRACTS

The after-treatment of the mastoid wound. C. T. Wolfe (*Jour. of O. & O.-L.*, Sept.) confines his paper to the simple mastoid operation. He advises instructing the patient or guardians that the operation is only the first step toward cure and prevention of involvement of vital tissue, that the after-treatment may take considerable time and that his co-operation is necessary. He considers sterile gauze more dependable than blood-clot dressing, and inserts it with considerable firmness in order to prevent hemorrhage and promote drainage. He, in most cases, sutures only the upper portion of the wound—to avoid a pocket at the lower angle—and prefers silkworm gut to clips because thus the periosteum can be included and brought forward to better advantage. If there has been no exceptional temperature and only moderate pain he changes the primary dressings on the fourth or fifth day, thoroughly cleansing the area before removing the packing—using hydrogen dioxid if the secretions adhere firmly—and gently cleansing the wound cavity with sterile cotton held with dressing forceps. He is as particular in the asepsis of dressings as of the operation. Sterile—or, in the initial stage, iodoform (not stronger than 5 per cent.)—gauze in half-inch selvedged strips is inserted with only moderate pressure and then the sutures are removed. Dressings are changed every second day, in normal cases, until the wound is well filled with healthy tissue which subsequently is filled with boric acid. The unsightly depression which has too commonly ensued may be prevented or mitigated if at the initial packing the gauze is so adjusted that the skin flap is directed upward and away from the cavity. Too much stress cannot be laid upon this step and a great deal of care must be exercised lest, being overzealous, we insert too much gauze—which may result in a gaping wound and make the auricle stand out from the head. If at the first dressing there is any purulent discharge at the external meatus that canal must be thoroughly cleansed and gauze inserted to the m. t.; this will also prevent atresia.

Post-operative sinus should be treated with caustics in hope of obviating radical surgery—bichlorid of mercury 1:500 or nitrate of

silver 200 grs. to the ounce, besides enlarging the opening and careful gauze drainage. If after three or four weeks this is unsuccessful a secondary operation is advised.

The removal during the operation of too much bone offers a wound slow to repair, more liable to infection, and may give the surgeon as much concern as insufficient removal.

It goes without saying that the vitality of the patient or his constitutional dyscrasia (syphilitic, tubercular, etc.) is an important factor and must be carefully studied. J. L. M.

Canthoplasty for the relief of otherwise incurable affections of the cornea and conjunctiva. A very limited number of cases of trachoma, progressive conical cornea, granular lids with keratitis, chronic catarrhal conjunctivitis with corneal complications, and vernal catarrh resist all manner of treatment; the best outlook, with medical attention only, is a long period of treatment, and the worst is for ultimate loss of all useful vision. Fortunately these cases are not common, but the suffering that occurs with the few warrants every means being taken to prevent their occurrence or to minimize the suffering.

Relief from pain and the more aggravating symptoms may be had by canthoplasty, and also improved vision, the degree of improvement depending upon the stage of the disease. The relief from inability to perform useful labor, and from pain from months or years of pressure of a granular or trachomatous lid upon a chronically inflamed or ulcerated eyeball, or the constant photophobia and lachrymation of such an eye, makes one of the most grateful patients that may be found in the practice of ophthalmology.

The upper canthal ligament or band of connective tissue should be cut close to the inner end of the incision through the external angle by stretching the upper lid up and toward the nose and inserting the blunt points of small scissors between the skin and conjunctiva, astride the canthal ligament at the open edge of the wound. This cut is very important to the success of the operation and should be made at right angles to the primary incision. Entropion cannot occur from division of this upper canthal ligament, but might were the lower so treated. The conjunctiva is stitched to the skin by pulling it to the very point of the newly-made angle, slightly undermining the conjunctiva if necessary. A thoroughly good bite of skin as well as

conjunctiva is essential to keep the sutures from cutting through the delicate tissue before union is complete.

Care should be taken to draw the conjunctiva well into the angle, past its original position and to obtain as nearly as possible a U-shaped angle to replace the former V-shaped one, as the U-shaped canthus tends to allow the greatest play of lid over the eyeball, while still performing all useful functions.—Manley, *Cleveland M. J.*, May; abstr. in Sept. *J. O. & O.-L.* J. L. M.

Ethylhydrocuprein for corneal serpent-ulcer and other pneumococcus infections. (1) Ethylhydrocuprein is that form of cinchona which gives the best clinical results; (2) it has a direct and specific action on the pneumococcus; (3) tolerance can be prevented by prompt and energetic treatment; (4) repeated treatments positively eradicate the organism; (5) in a serum vehicle a 1-800,000 dilution produces inhibition, a 1-400,000 death of the pneumococcus *in vitro*. An aqueous solution up to 5 per cent. caused no injury to the tissues in rabbits' eyes, and Goldschmidt produced an aesthesia of variable duration.

In thirty-one cases of pneumococcal corneal infection he instilled a 1 per cent. aqueous solution hourly and found that all beginning cases responded promptly and that even in more advanced cases the results were good. The first instillation was painful, but soon a prolonged anesthesia developed which rendered subsequent applications painless. Schur applies a fresh 2 per cent. solution on cotton, trying to limit the action of the drug to the affected area, until a grayish opacity appears in the vicinity of the ulcer. In his experience the rapid appearance of the grayish opacity is an indication that the ulcer is about to heal. He is convinced that the subsequent scar is much thinner than when caustics are used. Leber uses a 1 per cent. aqueous solution dropped into the sac or applied to the ulcer with a cotton swab. In 75 per cent. of his cases the ulcer promptly healed; in most of the remaining cases the healing, while slow, has been satisfactory.—Sept. *J. of O. & O.-L.*, from June *Interstate Med. Jour.* J. L. M.

Phylacogen in treatment of eye diseases. Phylacogens are not a sterile suspension of bacteria in physiologic salt solution like the bacterial vaccines, but are formed by the growth of micro-organisms on proper culture media. The germ bodies are discarded and the

filtrate, properly prepared, is what is made use of in the treatment of disease under the name of phylacogen. Mixed Infection Phylacogen is a polyvalent product of several bacteria met with in the common mixed infections, while Rheumatism Phylacogen and Gonorrhea Phylacogen differ from this basic preparation in that they contain respectively fifty per cent. of the metabolic products of the streptococcus rheumaticus and of the gonococcus.

The phylacogens are administered in larger doses than are the bacterial vaccines, and are at times given intravenously to advantage, a procedure never resorted to in vaccine therapy.

A striking feature of many of Decot's iritis cases in which synechiæ had formed has been the ease with which the atropin dilates the iris after one or more doses of phylacogen, when previously the drug had little effect.

The disappearance of the dense capsule after cataract extraction, rendering a needling necessary, in cases treated with phylacogen is likewise rather surprising but quite constant. It indicates the value of this treatment in post-operative iritis, which is an exceedingly serious complication so far as the integrity and function of the eye is concerned.—*Buffalo Med. Jour.*, Aug.; abs. in Sept. *Jour. of O. & O.-L.*

A new test for color blindness. J. Ellis Jennings has constructed a test* in which the worsteds are not handled and the candidate makes a permanent record of his own color sense. It consists of a square box divided into an upper and a lower half. The upper half of the box contains the green test and consists of a color board made up of the sixty-four different colors, shades and tints likely to be mistaken by the color blind for green. The lower side of the box contains the rose test and consists of a color board made up of the sixty-four different colors likely to be mistaken for rose. Near each patch of colored worsted is a circular opening in the color board which is for the purpose of registering the particular patch of color chosen by the candidate. This he does by inserting a pointed pencil through the opening and punching a hole in the record sheet beneath. The openings of the color boards are so arranged that the records of both the green and rose tests are made on a single sheet. The record sheet is accurately placed for green and the box turned around several

*Made by F. A. Hardy & Co., Chicago.

times until all sense of direction is lost. The green test skein, fastened to the inside of the box lid, is placed at a distance of two feet and the candidate given a pointed pencil with the request to look along each row of colored patches and when he sees the test color or one of its lighter or darker shades, he is to place the point of the pencil in the opening and punch a hole in the paper beneath, indicating all the color patches that appear to him of the same general color as the test skein.

Test No. 1 having been completed the record sheet is removed, the cover is replaced and the box turned over exposing Test No. 2, the rose. The same record sheet is placed under the rose color board, care being taken to have the top of the record sheet and the top of the color board marked on the back, "Test No. 2, rose," correspond. The rose test skein is now displayed and the test proceeds as before. The record sheet having been removed it will be seen that if the candidate has a perfect color sense there will be a punch mark in every space marked by a letter G, indicating green, and R, rose. Any punch mark in the blank space indicates a mistake. If the mistake is on a line with the letter G, the mistake was made in the green test. If the mistake is on a line with the letter R, the mistake was made in the rose test. By replacing the record sheet under the color board and noting the punch marks, one is able to see exactly what colors were selected to match the test skeins.—*J. of Mo. St. M. A.*, June; abs. in Sept. *J. of O. & O.-L.* J. L. M.

The hoarse voice in a child. Harold Hayes (*Med. Age*, July) reports the case of a child apparently hoarse from an enlarged gland on the pharyngeal wall. He thinks that tonsils, and particularly adenoids, are often the etiological factors in producing hoarseness in children. It is common in such children to see an associated bronchitis which readily clears up after the offending tissues are removed.

Hoarseness in children is very frequently caused by some condition in the larynx itself and is not dependent upon a primary cause elsewhere. Among the commonest causes of chronic hoarseness may be mentioned the "misplaced voice." Some children have a habit of speaking falsetto, with resulting strain. Hoarseness which may never disappear may result from allowing a child to continually speak in this manner. Among infectious causes may be mentioned croup,

frequently resulting in hoarseness, which may become chronic. Acute laryngitis in childhood is not uncommon and always gives rise to the hoarse voice, and of course diphtheria must be suspected in acute cases. If the hoarseness persists a considerable time, particularly if associated with embarrassed respiration, one should not be satisfied until he has made a thorough examination of the larynx, for it is frequently discovered that laryngeal polypi are present which can only be removed by direct fulguration or operation.—*Jour. of O. & O.-L.*, September. J. L. M.

REVIEWS

Nursing in Diseases of the Eye, Ear, Nose and Throat. By the Committee on Nurses of the Manhattan Eye, Ear and Throat Hospital, New York City. Second edition, thoroughly revised. 12 mo volume of 291 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, $1.50 net.

The book is really a text-book for nurses, but contains many valuable suggestions to the specialist not connected with any hospital and who operates but occasionally. To this second edition has been added several subjects, including the preparation of surgical dressings, mental disturbance after operations on the eye and functional tests of the static labyrinth. We would suggest that on page 183 or 184 the nurse be cautioned against the danger of indiscriminate syringing of ears. It is quite possible when syringing the ear for impacted cerumen of a patient who has a dry perforation to wash some of the material into the middle ear cavity and thereby precipitate a very annoying recurrence of middle ear suppuration. The nurse might also be instructed to use the water at about one hundred degrees Fahrenheit to avoid the risk of producing a vertigo. Furthermore, if the nurse has produced vertigo by not observing this precaution it would be well for her to be prepared to tell the patient that it is a perfectly normal reaction under the circumstances and allay any untoward alarm on the part of the patient.—Ed.

Diseases of the Nose and Throat. By Algernon Coolidge, M. D., Professor of Laryngology in the Harvard Medical School. 12 mo of 360 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, $1.50 net.

The book contains 360 pages including the index. The author is original and does not follow the usual routine style of the American text-book writers. The author presents his own opinions and does not burden the reader with lengthy discourses on the opinions of others. He frequently takes an individual symptom and enumerates the various pathological conditions in which the symptoms may be manifested. For instance, in referring to anosmia he mentions that it may be partial or complete, temporary or permanent. It may be

caused by inflammation of the mucous membrane or by obstruction into the olfactory nervous system. It is sometimes congenital. It may be present for a few days in acute rhinitis. It may be due to extensive nasal polypi, in which case it disappears after the obstruction has been removed. It is common and permanent in cases of extensive atrophic rhinitis. Influenza may be followed by temporary and sometimes permanent anosmia. It may be caused by alcohol, lead, or other local or systemic poison. It may be a symptom of tabes or other disease of the nervous system. Anosmia not infrequently appears temporarily, and sometimes permanently, without any obvious reason.

This is an excellent method of teaching a subject. It is the method by which we are qualified to come to a diagnosis by exclusion. It is an analytic method and the one adopted by many of the best European teachers. The book commends itself to the student, general practitioner and the specialist. It deserves a wide circulation.—Ed.

NEWS ITEMS

Applications may now be made for the fellowship in eye, ear, nose and throat at the University of Minnesota. The appointment is soon to be made of an additional fellow. This position covers a period of three years, during which the student devotes his entire time to the preparation as a specialist in eye, ear, nose and throat, taking courses in laboratory and clinical branches that are offered, and serving as an assistant in the clinic. At the expiration of the three years' service and satisfactory work, the degree of Doctor of Science in Ophthalmology and Oto-Laryngology is granted. The fellowship carries with it an honorarium of $500 the first year, $750 the second year and $1000 the third year. Requirements for admission are limited to those who have a bachelor's degree or its equivalent, as well as the degree of Doctor of Medicine from an acceptable institution with one year's experience as an interne in a hospital of recognized standard or its equivalent. Applications should be made to Dr. Frank C. Todd, Chief of the Division of Eye, Ear, Nose and Throat, or to Dean Daniel Ford of the Graduate Department of the University of Minnesota.

The Ophthalmic Year-Book, Volume XI, edited by Edward Jackson, M. D., Sc. D., of Denver, reached us in November. The book contains 545 pages including bibliographical index. It is an index medicus, containing a list of everything written on the subject of the eye. All original contributions are abstracted. It is a valuable reference book to anyone who practices ophthalmology and especially to those who contribute to the literature of the subject, and the JOURNAL is pleased to recommend it.

The Opticians' League of the State of New York held its annual meeting on November 17th in New York at the Hotel Lorraine.

This active society had its origin several years ago and has continued to oppose the methods of those opticians who try to deceive the

public into believing that the refracting optician and the oculist are of equal standing.

They endorse the idea of the oculist and optician in the same relation as the physician and pharmacist, as against the optometrist who by act of the legislature has the right to prefix "Doctor" to his name and is observed as an adjunct of most successful jewelry stores. They believe the obvious intent of this is to deceive the passer-by.

At this meeting their respected president, Mr. E. B. Meyrowitz, retired from office and the following were elected:

President, Charles L. Pilger.
Vice-President, J. B. Hoecker.
Treasurer, H. C. Badgley.
Secretary, Edward L. Seip.
Director for three years, Theodore Obrig.

With the installation of these men into office, it is purposed to awaken a more lively interest among the members of the League than hitherto, and of adding materially to the membership list, in furtherance of which they have arranged to provide a series of lectures during the winter on optics in its fundamentals and newer developments, upon ethics, and efficiency, for the employer and employe alike.

The banquet, always given in February, brings out a full attendance, and serves to promote a more effective organization.

OFFICIAL ORGAN OF THE AMERICAN HOMOEOPATHIC, OPHTHALMOLOGICAL, OTOLOGICAL AND LARYNGOLOGICAL SOCIETY

THE JOURNAL OF

OPHTHALMOLOGY OTOLOGY AND LARYNGOLOGY

DEVOTED To The INTERESTS Of EXCLUSIVISTS, SPECIALISTS AND GENERAL PRACTITIONERS

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VOLUME XXI
January to December, 1915

INDEX TO VOLUME XXI

CONTRIBUTORS

Aked, C. F., 383.
Alexander, G. J., 36, 29, 152, 231, 780.
Arndt, G. D, 759, 836.
Ashcraft, Leon T. 588.
Bayley, Weston G., 873.
Beals, M. B., 500.
Beebe, H. M., 319, 962.
Bell, W. O., 761.
Bellows, H. P., 996.
Bentley, N., 759.
Berezniak, L. A., 353.
Blackburn, W. J., 430.
Boyle, C. C., 496, 762.
Boynton, W. E., 829, 836, 837.
Bywater, Ed., 85.
Campbell, J. A., 336, 665, 756, 834, 933, 1032, 1044.
Clark, L. H., 426.
Clay, J. V. F., 99, 148, 419, 424, 563, 594, 700.
Champlin, H. W., 418.
Colburn, F. W., 1022.
Coleman, W. F., 823.
Collier, C. C., 838.
Copeland, R. S., 8, 969, 1030.
Crebbin, A. R., 339.
Cushing, G. M., 65.
Deady, Charles, 465, 466; 468, 490, 697.
Denman, I. O., 91, 192, 195, 198, 647, 854.
Dewey, Martin, 309.
Dieffenbach, W. H., 816.
Dowling, J. I., 30, 110, 150, 1006.
Eha, Charles, 862.
Eikenberry, A. A., 836.
Fellows, C. G., 933, 1028.
Ferree, J. A., 673.
Fette, G. T., 864.
Foster, H. A., 34, 240.
George, E. J., 758, 759, 833, 1043.
Gowens, H. L., Jr., 256.
Grinker, Julius, 666, 972.
Hahnemann, Samuel, 398.
Hall, C. F. A., 991.
Hallett, G. DeW., 27, 478, 1051.
Harkness, C. A., 1037.
Hartley, Arthur, 612.
Haseltine, Burton, 2, 3, 4, 13, 77, 607, 650.
Hawkes, W. J., 388.
Helfrich, C. H., 485.
Hetrick, L. E., 75, 505, 860.
Hill, R. F., 56.
Hillegas, W. M., 954.
Horner, J. Richey, 676.
Ibershoff, A. E., 121, 331, 638.
Jones, R. M., 523.
Kellogg, F. B., 136.
King, S. B., 358.
Kirkland, Edward, 1016.
Korndoerfer, A., 715.
Leopold, R. S., 575.
Lewy, Alfred, 161, 971.
Linnell, E. H., 125, 409, 847.
Lloyd, R. I., 681, 765.
Lutkin, H. C., 361.
Macfarlan, Donald, 537.
Marfarlan, Douglas, 252, 691, 733, 777, 804.
Macfarlan, M., 795.
Mackenzie, Alice, 881.
Mackenzie, G. W., 1, 19, 95, 96, 154, 151, 187, 189, 279, 350, 375, 434, 555, 556, 660, 661, 674, 787, 811, 858, 895, 971, 979, 981.
McCleary, J. R., 17, 811, 835.
McLean, Wm., 471.
Melion, R. R., 291.
Metzger, I. D., 965.
Moffat, J. L., 149, 367, 380, 739, 896.
Muncy, W. M., 833, 834, 972, 1045.
Munson, E. S., 488.
Muhly, E. G., 569.
Myers, D. W., 24, 279, 280, 283, 351, 600, 659, 913.
Palen, G. J., 32, 45, 144, 560, 594, 619.
Phillips, W. H., 20, 648, 708, 665.
Roman, D., 591.
Reed, R. G., 930, 1046.

Rice, G. B., 149, 683, 980.
Rice, Philip, 326, 376, 378, 456, 950.
Ritchie, F. G., 492.
Rowland, W. D., 213.
Rumsey, C. L., 18, 952.
Sandford, Burton, 221.
Schenck, H. D., 150, 342.
Seidlitz, G. N., 1025.
Shallcross, I. G., 873.
Shemeley, W. G., 1048.
Shepard, G. A., 34, 314, 520.
Smith, Conrad, 1018.
Smith, J. J., 935.
Smith, Wm. H., 850.
Sowers, Alva, 856.
Starr, N., 237.
Sternberg, J. E., 922.
Street, R. H., 140.
Suffa, G. A., 245, 1030, 1032.
Teets, C. E., 511, 736.
Thompson, LeRoy, 867.
Thompson, W., 792.
Torrey, Gertrude, 70.
Townsend, Irving, 133, 516.
Watters, W. H., 687.
Watts, H. A., 944.
Weaver, H. S., 151, 159.
Wessels, L. C., 400.
Widman, F. H., 561.
Williams, C. E., 529.
Williams, W. R., 583.
Worth, A. C., 750.
Wright, J. D., 744.
Wynn, J. J., 773.
Yale, A. W., 877.
Young, E. W., 394.
Zbinden, Theodore, 202.

CONTRIBUTIONS

Acknowledgment of Support of Contributors. (Ed.), 555.
Adenoids, New Instrument for the Removal of. M. M. Cullom (abstr.), 446.
A Few Plain Truths. Philip Rice, 326.
Air (The) We Breathe. I. O. Denman. (Ed.), 195.
American College of Surgeons. Burton Haseltine. (Ed.), 4.
Aneurism, Intracranial, Traumatic Arterio-venous—affecting both Eyes. W. G. Sym and A. Miles (abstr.), 363.
Anginas of the Exanthemata. N. Starr, 237.
Angina, Vincent's. H. A. Foster, 240.
An Honest Confession is good for the Soul. (Ed.), 95.
Announcements. 91, 98, 197, 282, 381, 470, 557, 468, 743, 898, 979, 990.
Appreciation of the Services of Associate Editors and Contributors. (Ed.), 279.
Artificial Eye; Improved Technique in Forming a Support for. F. G. Ritchie, 492.
Artificial Pupil in Seclusio Pupillae—Simplified Operation for Making. Philip Rice, 950.
Behring's Method of Active Immunization Against Diphtheria with a Mixture of Toxin and Antitoxin. S. B. Hooker (abstr.), 271.
Bilateral Auditory Neuritis Due to Poisoning by Illuminatnig Gas. J. V. F. Clay, 424.
Blindness from Brain Tumor. J. A. Campbell, 336.
Blindness, Functional. G. A. Shepard, 314.
BOOK REVIEWS
A Text-book of Diseases of the Nose and Throat. D. Braden Kyle, 184.
Cancer: Its Cause and Treatment. L. Duncan Bulkley, 552.
Directory of Homoeopathic Physicians in Greater New York and Vicinity, 1914. W. M. Conrow, 458.
Diseases of the Nose and Throat. Algernon Coolidge, 1060.
Edema and Nephritis. Martin H. Fischer, 458.
Electricity in Diseases of the Eye, Ear, Nose and Throat. W. Franklin Coleman, 891.

Glaucoma: A Symposium. Edited by Nance and Peck, 185.
Keynotes of the Homoeopathic Materia Medica. Adolph von Lippe. Edited by Donald Macfarlan, 808.
Nursing in Diseases of the Eye, Ear, Nose and Throat. By the Com. on Nurses of the Manhattan Eye, Ear, Nose and Throat Hospital, New New York City, 1060.
Squint: Its Causes, Pathology and Treatment. Claud Worth, 891.
Swanzey's Handbook of the Diseases of the Eye and their Treatment. Edited by Louis Werner, 891.
Brain Abscess Case, Comment on Dr. Haseltine's. W. H. Phillips. (Ed.), 648.
Bronchial Asthma. Burton Haseltine. (Ed.), 3.
Bullet Lodged in the Region of the Carotid Artery in the Skull: Successful Removal of. W. G. Shemeley, Jr., 1048.
Business Methods, Better—for the Physician. C. F. A. Hall, 991.
Calculus, Large, in Wharton's Duct. Alice V. Mackenzie, 881.
Cancer. (Ed.), 556.
Canthoplasty for the Relief of Otherwise Incurable Affections of the Cornea and Conjunctiva. Manley (abstr.), 1055.
Carcinoma, Endolaryngeal—Excision of. Otto J. Stein (abstr.), 887.
Carious Teeth a Factor in Ocular Disease (abstr.), 730.
Cataract, Congenital. C. F. Clark (abstr.), 448.
Cataract, Extraction with Preliminary Iridectomy, Irrigation and Discission: Results of 42 Cases. F. B. Kellogg, 136.
Cataract, Intracapsular Operation for. H. A. Watts, 944.
Cataract, Removal of Mature and Immature by the Intracapsular Method. J. J. Smith (abstr.), 544.
Cataract, Smith-Indian Intracapsular Operation for. J. J. Smith, 935.
Cataract, Soft, Extraction of the Capsule. G. N. Seidlitz, 1025.
Cataract, 100 Successive Extractions of, in the Capsule after Subluxation with the Capsule Forceps. A. Knapp (abstr.), 362.
Cataract Operation, Intracapsular. J. R. Hoffman (abstr.), 549.
Cataracts, Remarks About. G. Gurnee Fellows.
Cerebellar Abscess: A Rare Case. Burton Haseltine, 650.
Cerebral Lesions, Typical. Ralph I. Lloyd, 180.
Choroid, Conglobate Tubercle of. A. E. Ibershoff, 331.
Choroid, Melanoscarcoma of. D. W. Wells (abstr.), 176.
Choroid, Case of Metastatic. C. C. Boyle, 496.
Claudication, Intermittent, of the Larynx. J. Garel (abstr.), 540.
Colds: Their Etiology and Treatment. W. H. Phillips, 1012.
Colds, Treatment of. Edward Kirkland, 1016.
College of the New York Ophthalmic Hospital. (Ed.), 466.
Color Blindness: A Test for. J. E. Jennings (abstr.), 1057.
Congenital Absence of the Arteria Centralis Retinae with Embryonic Remnants over the Macula Lutea. Ralph I. Lloyd, 681.
Congenital Cataract. C. F. Clark (abstr.), 448.
Conical Cornea, New Operation for. Flavel B. Tiffany (abstr.), 803.
Constructive Work in the Management of the Institute. (Ed.), 897.
Corneo-scleral Trephine after the Elliott Method for the Reduction of Intra-ocular Tension. G. DeWayne Hallett, 478.
Corrections. 382, 722.
Correspondence. 172, 456, 733, 736, 804.
Current Literature: Lists of Titles and Abstracts. 162, 260, 362, 439, 539, 723, 797, 884.

Cystic Odontomas. G. B. New (abstr.), 269.
Deaf Child, What the Mother Ought to Know. (Ed.), 375.
Deafness, Prevention of. Lloyd H. Clark, 426.
Dental Pathology, Relation of to Eye, Ear, Nose and Throat Conditions. G. W. Mackenzie, 434.
Diabetes, Saccharine, An Indicated Remedy in. Donald Macfarlan (abstr.), 446.
Diphtheria: A Consideration of its Diagnosis and Rational Treatment. Burton Sandford, 221.
Drugs, Use and Abuse of. (Ed.), 468.
Ear Cases, Some. E. H. Linnell, 125.
Electrical Methods in Aural Inspection. L. E. Hetrick, 860.
Electricity, Static, in the Treatment of Eye, Ear, Nose and Throat. A. W Yale, 877.
Electric Magnet in Eye Work. I. O. Denman, 854.
Electric Ophthalmoscope, The. D. W. Myers, 871.
Electro-magnet, The U-shaped. G. T. Fette, 864.
Electro-medicament. J. R. McCleary. (Ed.), 811.
Electro-therapeutics, in Ocular Disease. LeRoy Thompson, 867.
Electro-therepautics, Principles of. W. H. Dieffenbach, 816.
Elliott Operation, The. J. Ivmey Dowling, 110.
Epilepsy and Eyestrain. E. H. Linnell, 409.
Ethylhydrocuprein for Corneal Serpent-ulcer, etc. (abstr.).
Euonymin in Diseased Conditions of the Nose and Throat. Chas. E. Teets, 511.
Eustachian Tube, Yankauer Operation on. J. L. Lougee (abstr.), 180.
Eye and Ear Surgery and Prothesis in 1634. R. I. Lloyd, 765.
Eyeball, Complete Disappearance of, Following Birth Injury. W. F. Hardy abstr.), 450.
Eye Disease, Phylacogen in the Treatment of (abstr.), 1056.
Eye, The, from a Neurological Standpoint. J. Richey Horner, 676.
Eye Spud, An Improved. H. W. Champlin, 418.
Eye, Two Unusual Injuries to. A. R. Crebbin, 339.
Eyestrain, the Role of, in General Practice. Cobbledick (abstr.), 178.
Eye, Tumor of, Presenting Unusual Features. R. H. Elliott (abstr.), 447.
Eye, Unusual Accident which Caused the Loss of. C. W. Kollock (abstr.), 450.
Eyes, Value of Proper Care of, During Childhood and Adolescence. R. G. Reed, 930.
Farther East: Two Months' Clinical Work in Philadelphia. W. Thompson, 792.
Faucial Tonsils. (Ed.), 556.
Faucial Tonsils: A Symposium, 560.
Preface. G. J. Palen, 560.
Embryology and Physiology. F. H. Widman, 561.
Anatomy. J. V. F. Clay, 563.
Histology. E. G. Muhly, 569.
Pathology and Bacteriology. R. S. Leopold, 575.
The Tonsil from the Standpoint of the Internist. W. R. Williams, 583.
The Tonsil from the Standpoint of the Urologist. L. T. Ashcraft, 588.
The Relation of the Toncil to the Thyroid Gland. D. Roman, 591.
Focal Infection. G. J. Palen and J. V. F. Clay, 594.
Treatment and Materia Medica. Dean W. Myers, 600.
Tonsil Surgery and Voice Function. Burton Haseltine, 607.
Anaesthesia in Tonsil Operations. Arthur Hartley, 612.
The Tonsil Operation. Gilbert J. Palen, 619.

Ferments (Les) de defense dans les malades des yeux. C. A. Hegner (abstr.), 262.
Foreign Bodies in the External Auditory Canal. J. V. F. Clay, 419.
Formic Acid as a Polychrest. J. H. Clark (abstr.), 885.
Fracture of the Cranium. Rollet et Genet (abstr.), 263.
Fresh Air in Schoolrooms, the Problem Solved. J. B. Todd (abstr.), 367.
Galvanic Test as an Aid in the Differential Diagnosis of Inner Ear from VIII Nerve Affections. G. W. Mackenzie, 858.
General Systemic Disturbances and Catarrhal Conditions of the Nose and Throat. E. Weldon Young, 394.
Glaucoma: A New Theory, etc. C. A. Harkness, 1037.
Glaucoma and Optic Neuritis. Charles C. Boyle, 762.
Glaucom (das) der Jugendlichen. G. B. Scleich (abstr.), 725.
Glaucoma, Sclero-corneal Trephining in Operative Treatment of. R. H. Elliott (abstr.), 448.
Glaucome secondaire, le traitment chirurgical. V. Morax et A. Fourriére (abstr.), 542.
Glaucoma, Treatment of, by Sclero-corneal Seton. C. A. Wood (abstr.), 887.
Glioma of the Retina with Report of a Case. Jos. E. Sternberg, 922.
Good Even in Hurtful Things. Hahnemann, 398.
Gun Deafness. Jobson Horne (abstr.), 803.
Had We not Better Stop and Consider? Philip Rice. (Ed.), 378.
Hay Fever and Its Treatment. George B. Rice, 683.
Hay Fever, Vaccine in. W. H. Watters, 687.
Heated Ether and Oxygen, the Use in Nose, Throat and Ear Operations. R. Franklin Hill, 56.
Hemianopsia, Homonymous Quadrangular. G. F. Suker (abstr.), 731.
Hexamethylamin to Prevent Sympathetic Ophthalmitis. Dinkelspiel (abstr.), 727.
High Frequency Currents in Special Work. E. H. Linnell, 847.
High Frequency Current, the Treatment of Keratitis and Its Sequelae by W. E. Boynton, 829.
High Frequency in Special Practice. W. H. Smith, 850.
History of the Journal. (Ed.), 1.
Hoarse Voice in a Child (abstr.), 1058.
HOMOEOPATHIC MATERIA MEDICA AND THERAPEUTICS.
Belladonna, Capsicum, Guaiacum, Apis, Mer. cor., Phytolacca. H. S. Weaver, 159.
Occipital and Cervico-occipital Headaches. A Korndoerfer, 715.
Remedies in Epistaxis. Donald Macfarlan, 537.
Therapeutic Jottings (Provings and Clinical Observations with High Potencies). M. Macfarlan, 795.
Hospital, French Red Cross. (Ed.), 187.
Hydrophthalmus following Trauma. H. H. McGuire (abstr.), 449.
Hyoscin and Morphin as a Preliminary to Local Anesthetics. L. M. Hurd (abstr.), 165.
Hypophoria and other Heterophorias. J. L. Moffat. (Ed.), 380.
Influenzal Infections of the Nose, Throat and Ear. G. J. Alexander, 231.
Inspiration. (Ed.), 741.
Institutional Children, Examinations of the Ears of. S. K. Frost (abstr.), 543.
Internal Remedies in Acute Inflammatory Conditions of the Middle Ear. H. P. Bellows, 996.
Intracapsular Cataract Operation. J. R. Hoffman (abstr.), 549.

Intranasal Antrum Operations, with Report of 90 Cases. H. McNaught (abstr.), 974.
Intranasal Drainage of the Lacrimal Sac. J. A. Pratt (abstr.), 800.
Intranasal Partial Resection of the Tear Sac. J. Sheldon Clark (abstr.), 724.
Intraocular Pressure, Experimental Investigations Concerning. W. McLean, 471.
Intubation Apparatus and Tubes for the Treatment of Chronic Stenosis of the Larynx. H. L. Lynah (abstr.), 446.
Irideremia, Complete Bilateral, in a Child Whose Father has Bilateral Coloboma of the Iris. A. C. Lewis (abstr.), 450.
Iritis, Treatment of. A. C. Worth, 750.
Journal, A New. (Ed.), 979.
Journalism, New Medical. Burton Haseltine. (Ed.), 2.
Jury, the Bulwark of Freedom. L. A. Berezniak, 353.
Jury, Trial by, the Great American Farce. Burton Haseltine, 77.
Laryngeal Diphtheria. G. M. Cushing, 65.
Labyrinth Tests, the Practical Value of. G. W. Mackenzie, 787, 971.
Larynx, Alcohol Injections in Tuberculosis of. Bucher and Chamberlin (abstr.), 177.
Larynx, Topography of. J. A. Cavanaugh (abstr.), 728.
Lens, On the Management of when Accidentally Dislocated into the Depths of the Vitreous. Charles H. Helfrich, 485.
Leukemia, Acute, as First Manifested in the Tonsils. G. J. Alexander, 780.
Limbal Puncture. David Priestly Smith (abstr.), 727.
Lip Reading for the Slightly Deaf. Gertrude Torrey, 70.
London Meeting of Surgeons. E. R. Kellogg (abstr.), 264.
Mastoid Abscess, Acute: Treatment of from the Etiologic Standpoint. G. W. Mackenzie, 154.
Mastoid Cases: A Recent Series of. Gilbert J. Palen, 144.
Mastoid Operation, Modern Radical. F. W. Colburn.
Mastoid Wound, After-treatment of. C. T. Wolfe (abstr.), 1054.
Mastoiditis and Mastoid Abscess without Suppuration from the Middle Ear Carrol B. Welton(abstr.), 549.
Mastoiditis, Atypical. L. E. Hetrick, 505.
Mastoiditis, Bezold's, a Third Series of Cases. G. J. Palen, 45.
Mastoiditis, Early Diagnosis of. J. J. Kyle (abstr.).
Mastoiditis, Four Interesting Atypical Cases. J. V. F. Clay, 700.
Mastoiditis, Interesting Case of. G. A. Shepard, 520.
Materia Medica, a New Way of Studying. Philip Rice (abstr.), 264.
Materia Medica and Special Practice. W. J. Hawkes, 388.
Maxillary Sinus, Preturbinal Operation on. R. H. Skillern (abstr.), 165.
Medical Licensure. W. J. Blackburn, 430.
Mentally Defective Children, Refraction of. M. B. Beals, 500.
Middle Ear Disease, New Treatment of. C. E. Williams (abstr.), 529.
Mucocele of the Frontal and Ethmoid Cells. W. C. Posey (abstr.), 449.
Nasal Obstructions as the Cause of Diseases of the Middle Ear. G. J. Alexander, 36.
Nasal Props and an Operation for the Incapable Nose. J. L. Moffat. (Ed.), 896.
Nasal Septum, Submucous Resection of. Conrad Smith, 1018.
Naso-Pharyngeal Infections, Pathology and Bacteriology, with some Suggestions for Effective Vaccine Therapy. Theodore Zbinden, 202.
Needle, for Submucous Suturing and a New Instrument for Tying Sutures within the Nose. L. E. Hetrick, 75.

Neo-Salvarsan, Inefficacite du, dans la keratite Leredo-syphilitque. Camille Fromaget (abstr.), 540.
New York Ophthalmic Hosp., Statistics of. G. DeW. Hallett, 1051.
NEWS ITEMS. 92, 186, 274, 371, 463, 553, 737, 809, 893, 977, 1062.
Nose and Throat Clinic, Relative Proportion of Cases in. Douglas Macfarlan, 252.
Nurses (The) Our Allies. I. O. Denman. (Ed.), 192.
O. and O. Meeting, The Next. D. W. Myers. (Ed.), 279.
Observation (abstr.), 884.
Occlusive Bandage in Corneal Affections, The Value of. C. L. Rumsey, 952.
Occupational Diseases of the Eye. W. M. Hillegas, 954.
October Number, The. (Ed.), 811.
Ocular Disease of Dental Origin. A. E. Ibershoff (abstr.), 885.
Oesophagus, Restoration, or Substitution for. V. Hacker (abstr.), 162.
O. O. and L. Society—1915 Meeting. I. O. Denman, Sec. (Ed.), 647.
O. O. and L. Society, Stricter Requirements for Membership in. (Ed.), 95.
Ophthalmic Teaching, Some Observations on. I. D. Metzger, 965.
Ophthalmies (les) en Cyrenaique. N. Farid (abstr.), 540.
Ophthalmology and Otolaryngology, Borderland Topics. (Ed.), 189.
Ophthalmology, Guaiacol in. H. L. Gowens, 256.
Ophthalmometer, The Value of. E. S. Munson, 488.
Ophthalmotrope, A New. G. A. Suffa, 245.
Optometry, Regulation of. (Ed.), 191.
Orbital Oedema. J. J. Wynn, 773.
Orthodontia. D. W. Myers (Ed.), 280.
Osteoplastic Surgery of the Face. W. W. Babcock (abstr.), 269.
Otitic Sinus Thrombosis. C. F. Pfingsten (abstr.), 887.
Otitis Media, Formula for Local Application in. A. Lewy, 161.
Otology, Report on Recent Developments in. T. J. Harris (abstr.), 173.
Our Fruitless Efforts. Philip Rice. (Ed.), 376.
Ozena, Treatment of, by Paraffin Injections. M. R. Blegvad (abstr.), 446.
Palmer, A. Worrall. J. L. Moffat. 739.
Papilloma, Laryngeal, Treated and Cured by the Roentgen Rays. I. G. Shallcross and W. D. Bayley, 873.
Papilloma of the Larynx. R. M. Jones, 523.
Pernicious Anemia. J. A. Ferree, 673.
Peroral Endoscopy. C. C. Collier, 838.
Pharyngo-Eustachian Infections. I. O. Denman, 198.
Pituitary Disorders, Surgical Experiences with. Harvey Cushing (abstr.), 174.
Pneumo-massage in Diseases of the Middle Ear. H. D. Schenck, 342.
Pneumo-massage of the Eustachian Tube and Tympanium. Alva Sowers, 856.
Post-graduate Experiences in Chicago. Ed. Bywater, 85.
Post-graduate Instruction. (Ed.), 465.
Post-graduate Instruction. Charles Deady, 697.
Post-graduate Ophthalmic Teaching in America. (Ed.), 895.
Post-operative Insanity with Special Reference to Ophthalmic Cases. A. O. Pfingst (abstr.), 799.
President's Address—Twenty-eighth Annual Meeting O. O. and L. Society. 913.
Prunus in Glaucoma. J. H. Buffum (abstr.), 546.
Pterygion, Note sur une nouvelle operation du—Uribe y Troncoso (abstr.), 262.
Pterygion, Operation du. A. Terson (abstr.), 262.
Radium Therapy Technique. McDuffie, Hoyt and Sackin (abstr.), 798.

Remedies in Acute Congestion. H. E. Hinsdale (abstr.), 797.
Reply, A. S. B. King, 358.
Reply, Another. H. C. Lutkin, 361.
Retinal Hemorrhage with High Blood Pressure apparently from the Excessive Use of Tea. Charles Deady, 490.
Retinitis Punctata albescens et pigmentosa. Dr. Martha Diem (abstr.), 450.
Rhinological Operations, Cause of Failure. Martin Dewey, 309.
Riggs' Disease, Examination and Treatment of. (Abstr.), 369.
Royal Infirmary, Edinburgh. Report for 1914 from the Ear and Throat Department. (Abstr.), 798.
Saccharine Diabetes, An Indicated Remedy in. Donald Macfarlan (abstr.), 446.
Sarcoma, Epibulbar, with Microscopic and Macroscopic Sections. L. W. Crigler (abstr.), 363.
Saunders, John Cunningham. Abstr. from Royal London Hosp. Reports. 166.
Science. D. W. Myers (Ed.), 280.
Screw Worms in the Nose and Nasal Accessory Sinuses. Huber and Flanck (abstr.), 182.
Septal Deformities, A Practical Method of Correcting. Irving Townsend, 133, 516.
Silk Drainage of the Vitreous to Tenon's Lymph Space. D. T. Vail (abstr.), 729.
Sinus Disease, Accessory Nasal—A Possible Cause of Suicide. J. L. Dowling, 1006.
Sinus Disease (Chronic), Chronic Tonsillar and Tonsillar Adenoid Disease, etc. J. C. Beck (abstr.), 547.
Sinus Disease, Obscure, in Relation to General Health. Burton Haseltine, 13.
Sinusetes, Acute Frontal, New Treatment for. Douglas Macfarlan, 777.
Sinusitis and Ethmoiditis, Frontal, with External Fistula, etc. (Abstr.), 550.
Sinusoidal Current in Ocular Therapeutics. W. F. Coleman, 823.
Sinus Roentgenography. H. M. Beebe, 962.
Skiagraphic Diagnosis of Nasal Accessory Sinuses. H. M. Beebe, 319.
SOCIETIES
Announcement, Special, to the Members of the American Hom. O. O. and L. Society. I. O. Denman, 91.
Annual Meeting of the Amer. Med. Editors' Assoc., 1915. 807.
Annual Meeting of the O. O. and L. Society—Announcement. 451.
Annual Meeting of the Southern Hom. Med. Assoc., 1915, and Announcement. 743, 807, 890.
American Institute of Homoeopathy, 1915 Session. 551.
Colorado Ophthalmological Congress, 1915. 644.
Minutes of the December Meeting of the Phila. Eye, Ear, Nose and Throat Society. J. V. F. Clay, 170.
Minutes of the February Meeting of the Phila. Eye, Ear, Nose and Throat Society. J. V. F. Clay, 274.
Officers of the National Societies for 1915-1916. 975.
Reunion of the College Hom. Med. of the State of Ohio. 90.
Transactions of the 28th Annual Meeting of the O. O. and L. Society. 899.
Specialties, the teaching of, in the Undergraduate Medical Colleges. R. S. Copeland, 8.
Specialist, My Friend. C. F. Aked, 383.
Speech, Better, for the Deaf. J. Dutton Wright, 744.
Stauungspapille bei sclerosis disseminata. Tschirkowski (abstr.), 272.
Stenosis of the Larynx. L. T. Jackson (abstr.), 801.

Stenosis of the Larynx, Intubation apparatus and Tubes for. H. I. Lynch (abstr.), 446.
Streptococcus Question, The. D. W. Myers, 283.
Streptococcus Sore Throat, Method of Early Diagnosis. R. R. Mellon, 291.
Streptococcus Sore Throat, Traced to Milk of Cows. Capps and Davis (abstr.), 162.
Surgeon, The. Selected, 277.
Surgical Congress, The. G. B. Rice. (Ed.), 980.
Suspension Laryngoscopy. W. Freudenthal (abstr.), 802.
Syphilis, Modern Views of. Burton Haseltine, 242.
Syphilitic Lesions of the Ear. J. V. F. Clay, 99.
Thermic Penetration. Charles Eha, 862.
Tonsillar Infection. W. D. Rowland, 213.
Tonsillectomy: The Forward Inclined Position, etc. Denman and McKesson (abstr.), 888.
Tonsillotomy vs. Tonsillectomy. Richard H. Street, 140.
Tonsils, Enucleation of, with the Fingers. E. Borchers (abstr.), 178.
Tonsil, The, and Certain Systemic Conditions. M. E. Hopkins (abstr.), 447.
Transparent Preparations. (Ed.), 98.
Treatment of Acute Mastoid Abscess from the Etiologic Standpoint. G. W. Mackenzie, 154.
Trial Frame, A New Improved. A. E. Ibershoff, 638.
Tympanic Deafness, Treatment of Advanced. P. D. Kerrison (abstr.), 270.
Uveal Tract, Inflammation of. Charles Goulden (abstr.), 166.
Uveite sporotrichosique avec sporotrichosique episclerale secondaire. V. Morax (abstr.), 542.
Uveitis, Toxic, following Vaccination. A. E. Ibershoff, 121.
Vacation (A) in Central America. W. H. Phillips, 708.
Vaccine in Hay Fever. W. H. Watters, 687.
Vaccines (so-called stock) and Their Value in Suppurative Middle Ear Disease. Douglas Macfarlan, 691.
Vibrations in the Treatment of Ear Diseases. Hubby, 163.
Vision Improved by Homoeopathic Prescribing. L. B. Hurd (abstr.), 546.
Visual Acuity, Influence of Lateral Illumination on. J. H. Parsons (abstr.), 167
Visual Defects in Children, Importance of Correcting. L. C. Wessels, 400.
Vital Force, The. W. Littlefield (abstr.), 546.
Wagging the Ears. (Abstr.), 761.
What the Mother of a Deaf Child Ought to Know. (Ed.), 375.
Wood Alcohol Amblyopia. James A. Campbell, 756.

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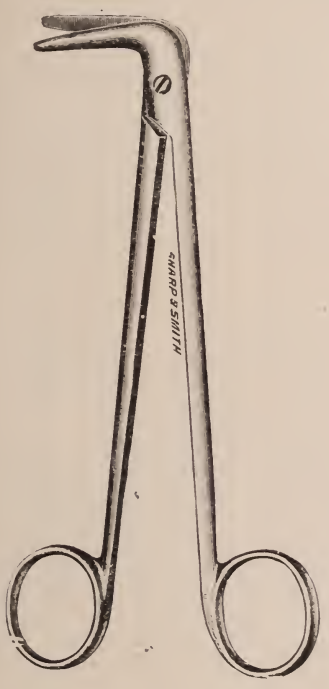
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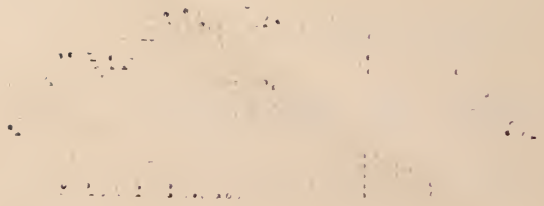
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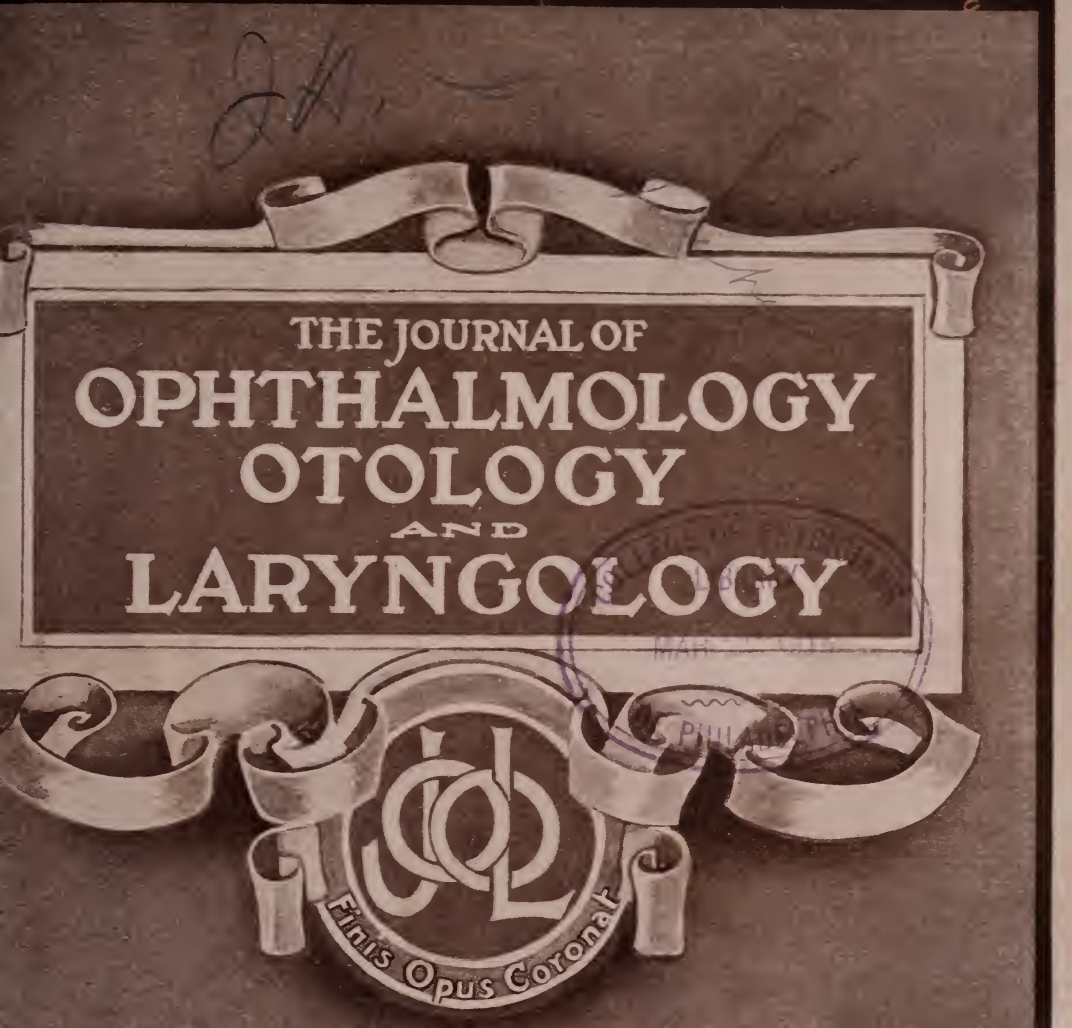
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